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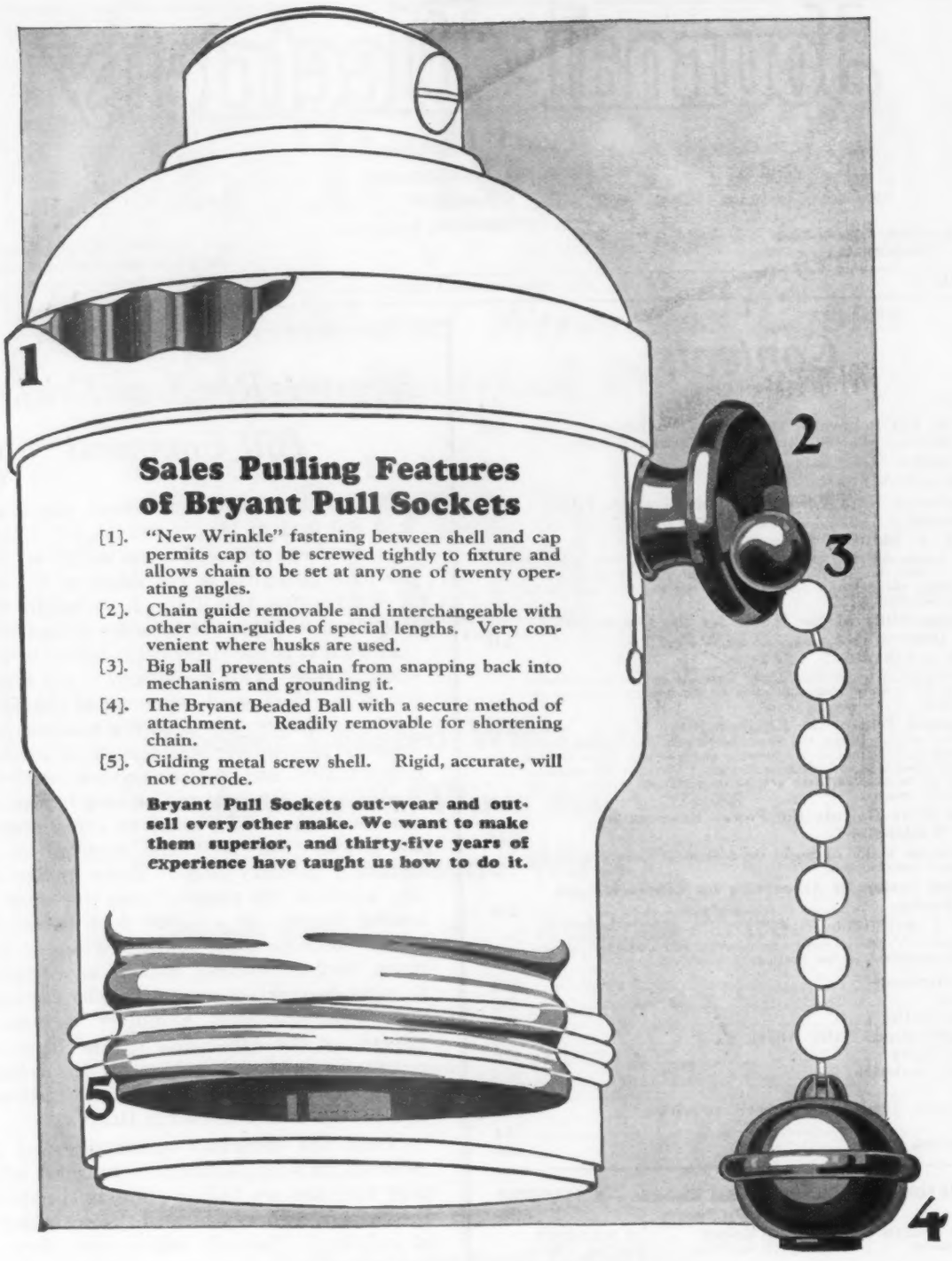
Reprints Ready on Erickson Bill Comment

ON another page of this issue appears the full text of the "Erickson Bill," which has been proposed as an initiative measure to be presented to the voters of the State of Washington this fall. It is worth while reading this document in order to appreciate just what it is the electrical industry is called upon to face. This movement is not a problem of the Northwest alone, nor of the Northwest and California—if such a measure were actually passed over the protest of the more conservative and clearer-sighted voters in Washington, it would not be long before similar measures would be up in every state in the Union. Nor is it the problem of the electrical industry alone. Every public utility, whatever its nature, faces the same potential danger—in a hardly less direct way, every business must decide before it goes much farther whether it is to be compelled to meet destructive competition by the state. How imminent such a danger is may be judged by the experience of the insurance companies in many sections of the country in the matter of state employers' insurance and by the banks in North Dakota.

Both the insurance companies and the railroads have appreciated the prospect which they face and are taking steps to counteract the current tendency toward the socialization of industry. The only reason why they are not now cooperating more closely with the electrical industry is because they are not kept fully informed as to just what the situation is.

With the thought that there will be many interested in this Washington bill who may not see it in the columns of the Journal of Electricity and to whom our readers may wish to send copies, we are saving the type and shall be glad to furnish reprints of the measure and the comments of this paper upon its dangers, at a nominal charge.



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Exterminating the Public Ownership Mosquito

WILLIAM JENNINGS BRYAN, malaria and mosquitoes used to be looked upon as unavoidable seasonal phenomena. We have done away with the mosquitoes —and with them the malaria, but in their place we have acquired a series of other troubles which occur periodically at the time of the meeting of our state legislatures or at such times as opportunity is given to place initiative measures before the public. Among this group we have grown familiar with the single taxer, the anti-vivisectionist and the chiropractor—and we are now getting used to the government ownership advocate as a yearly occurrence.

THE State of Washington is this year facing an attack of public ownership fever. It takes the form of the so-called "Erickson Bill," the substance of an early draft of which is presented on another page of this issue. This is an initiative measure which proposes to make possible the formation of "utility districts" throughout the state, whose purpose shall be to undertake the generation and sale of electric energy. Its faults are those common to all such measures—it provides for a state monopoly with almost unlimited powers of incurring indebtedness, meeting losses by taxation and arbitrary and discriminatory rate fixing, and it leaves no recourse to the public in case these powers are abused.

WE have published the text of this proposed measure in full, together with comments upon its dangers, because we believe that any such attack upon the principles of individual enterprise, wherever it occurs, is a matter of active concern to every section of the country. The electrical industry is too prone to fight its individual battles alone. Every large business has its public relations problem and its organized department to meet the demands of publicity and the establishing of good will. The tendency is for each company to make its own plans and to resent somewhat ideas which originate outside its own ranks. This attitude is perhaps inherent in the very individualism of private ownership which we approve—but it is the weakness upon which the public ownership advocate trades most.

THE electrical industry must form a concerted plan of campaign and act together. Very much the same line of argument and the same political tactics must be met in every case. The Ontario Commission, the city system of Seattle, Tacoma and Los Angeles will be misquoted in every public ownership fight—and so long as the question appears on the ballot in any part of the country, the echoes of debates argued out during 1922 in the California contest will be heard. The fact that the points made at that time by those advocating public ownership were met in every case and that the voters were so convinced of their fallacy that they defeated the measure 2 to 1 will not hinder this resurrection.

IT appears that the time has come for a very definite co-ordination of effort, not only between power companies in the various local centers but between California and the Northwest—or any other points affected. The Journal of Electricity believes that the matter should not be allowed to drift longer. In the meantime the news columns of this paper and its editorial comment are the best available means of keeping in touch with the events and policies worked out in the different sections of the Coast.

Where Are Electrical Dealers to Come From?

IT seems to have been the case in the past that electrical contractor-dealers, like Topsy, "just growed." They have come from many walks of life and from many other businesses. There has been no established line of progress into this important branch of the industry. Unfortunately, in many cases there has been no advance preparation. This has reacted in expense, discomfort and dissatisfaction to the consumer; in disadvantage to the manufacturer and jobber—because of improper sales methods—and in direct loss to the central station owing to restricted use of electrical equipment and the attendant reduction in possible revenue. Many contractor-dealers have been fostered or sponsored in their business by jobbers and possibly by manufacturers.

Wherever there seems to be a need for additional outlet of this nature and where a choice is deliberately made, would it not be better to support the entry into this field of a trained salesman; one who knows merchandise and materials, who knows something of buying and selling, of turnover and discounts, of credits and collections? Such procedure would mean the establishment of a firm the head of which was already familiar with the electrical technicalities and was also well versed in the general conduct of a merchandising business. It would seem that the percentage of failures should be materially reduced and the loss to jobbers and manufacturers written in smaller figures. Consumers would receive more intelligent attention and the satisfaction of electrical application would be materially increased.

Why Discriminate Against Electric Trucks?

AT the last session of the California State Legislature, a 2c. gasoline tax was imposed for the purpose of raising revenues for the upkeep of state highways. At the same time, the registration fee on all classes of vehicles was reduced to a nominal amount, intended to cover merely administrating expenses of the department. For commercial vehicles an additional weight tax must be paid, varying from $5 to $40, depending upon the unladen weight and the type of tire used. This left a disparity in payment between electric and gasoline trucks and apparently with an eye to evening matters off, a special registration fee of $50 was fixed for electric trucks.

Obviously, this was intended to balance the gasoline tax—but in reality it works a marked injustice against the electric vehicle. Upon a basis of 2c. per gallon for gasoline, it would take a larger mileage per day than the cruising radius of the average electric truck to make up the equivalent of $50 worth of travel. Taking the figures of actual performance, the disparity is even greater. With the smaller trucks it may be figured that a gasoline machine pays something like $7.50 for the same service which costs the electric truck $50 per year. In this connection, it is pointed out that under the King tax bill, electric current is already taxed to meet state expenditures to the extent of 7½ per cent of the gross earnings of the power companies, a factor which amounts to a figure of from $9 to $20 per year.

Looking at the matter from the viewpoint of charging vehicles in proportion to the damage which they do to the highways, which is the theory underlying this type of legislation—it becomes obvious that instead of being penalized, the electric truck should be favored. It operates at a steady and comparatively low speed, avoiding impacts which are so destructive to highways. Furthermore, owing to their limited cruising range, electric trucks are seldom used on the state and county highways, but are confined very largely to city streets.

It is understood that electric truck owners will make payment of their 1924 taxes under protest and that test action will be brought against this section of the Vehicle Act. Certainly there is no reason for this unfair discrimination—and some step should be taken to see that in the future the electric truck will receive the encouragement that it deserves.

The Americanization of Ole Hanson

AMONG the colorful figures in public life during the past decade, Ole Hanson, former mayor of Seattle, stands out for the vigor of his personality. Some will remember him for the story that was told of his facing the verdict of "not six months to live" by packing up his belongings and his family and walking most of the way across the continent from Wisconsin, incidentally regaining his health en route. Others will remember his prompt action in ending the general strike and labor troubles of Seattle while he was mayor of that city in 1919. Some know only that during the same term the Seattle street railway lines were taken over by the city and the field of the city lighting bureau was extended by the undertaking of the extensive Skagit River project. Ole Hanson fought for the measures he approved and at the time he was a vigorous advocate of municipal ownership.

Today he is in the real estate business in Los Angeles. And he will tell you frankly that his experiences have led him to change his mind and that he does not believe that any city should be engaged in the utility business. He has tested it out and he knows that municipal ownership is wasteful, it is inefficient, it increases the tax rate and it opens up a rich field for individual political gain. His personal statement will be found on another page of this issue. It is worth the reading.

Executives, Democracy and Public Relations

INDUSTRIAL democracy embodies a beautiful idea, especially the democracy part of it. The spectacle of the lion and the lamb lying down together, so to speak, appeals to the sentimental idea that all men were created free and equal, although, on its practical side, this doesn't seem to work out, somehow. The electrical clubs in Western cities have had a genuine humanizing influence with respect to creat-

ing an atmosphere of mutual tolerance, even respect, between business competitors. The mellowing influence of the round table, the relaxation from business cares afforded by the luncheon hour and the twenty-minute speaker, have an effect upon the individual the value of which can hardly be overestimated.

But—and it is a sizable "but"—from what class of electrical men is the average attendance at electrical luncheon clubs recruited? There is no more than a sprinkling of the higher executives in semi-regular attendance. This is especially true of the central station class. Are they not, therefore, overlooking an opportunity to cement their public relations within the collateral branches of their own industry? Surely there would be no sacrifice of dignity for some of the odds and ends of assorted vice-presidents, or even a president or two, to sit down at the table next to a jobbers' salesman or a contractor-dealer, for instance, and do it once or twice a month, and swap yarns in a friendly way. They are busy men, no doubt, but busy as they are, could they put in an hour or two each month to a better advantage?

How are we going to make an industrial democracy without democrats?

Portland Makes Convenience Outlets Compulsory

IN the 1924 Electrical Code published by the Department of Public Works of the City of Portland appears the following clause:

> Approved receptacles for attachment plugs, connected directly to the circuit wires by not smaller than No. 14 wire shall be provided in parlors, living rooms, dining rooms and kitchens. A light outlet shall be so placed as to illuminate the front of every furnace or heating boiler. These requirements apply to all buildings which are to be wired for electric light.

In a footnote it is explained that it is the purpose of the above rule to prevent so far as is possible unlawful and dangerous extensions of flexible cord in order to obtain outlets that are nearly always needed.

This is a new step in municipal regulation and marks official recognition of modern conditions in the home. Electric appliances are in such general use that there is hardly a family that does not use its electrical outlets for purposes other than lighting. The Portland code frankly recognizes this fact and specifies that proper provision shall be made to care for portable lamps and for labor-saving devices. So far as we have been able to learn, this is the first instance in which convenience outlets have been compulsory in a city code.

A Booklet for Electrical Salesmen

PRESUMABLY the washing-machine salesman knows all about washing machines and can answer any legitimate question on the subject. Without examining too fully into the complete wisdom of the specialty salesman, it nevertheless remains that there are a great many people selling electrical equipment of various sorts who are not specialists on that particular appliance and who are apt to find themselves embarrassed by a lack of knowledge in the face of inquiring customers. This ignorance is not confined to those who meet the public in a direct sales capacity, but is even more widespread among the rank and file of the electrical industry who, although they never make a direct sale, are nevertheless looked upon as experts in their field and are called upon to advise in the matter of electrical purchases. Try asking the electrical man seated nearest to you how the cost of operating an electric water heater compares with the use of gas equipment or whether it pays to heat a house electrically—and unless he happens to be a specialist in that line, figure out for yourself why the public is skeptical on these subjects.

Feeling that a fundamental knowledge of those subjects that will enable him to answer the usual questions asked by the customer is an essential part of the equipment of every electrical man, particularly of every electrical salesman, the California Electrical Cooperative Campaign has authorized the compilation of a little booklet to satisfy the need for this information. This is a praiseworthy undertaking and one which, if it can be carried out effectively, will meet a real need. Every assistance should be given the committee in charge in compiling this book—and after it is published, it should be put in the hands, not only of those who conduct Electric Homes, but it should be furnished also to electrical retailers in every field for the use of themselves and their staffs.

Reducing the Costs of Hydroelectric Development

THERE never has been a failure of a simple arch dam. This means that there is no way of knowing what factor of safety exists in such structures as are now erected and whether it might not be possible to reduce the thickness and hence the cost without in any way affecting the safety of the dam. In view of the fact that dam costs often make up more than half the original investment in hydroelectric construction per horsepower, it is a matter of vital importance in water power development to learn whether such a saving is possible. Western power companies are watching with interest the experiments contemplated by the committee of the Engineering Foundation on arch-dam investigation.

Under the direction of this committee, it is planned to erect an experimental dam on Stevenson Creek, about 60 miles from Fresno, Calif., that will be tested under various conditions of operation and finally loaded to destruction. The site chosen is most favorable for such an experiment and careful plans have been made—all that is required is the necessary funds to go ahead. It is estimated that about $60,000 will be needed for carrying out this test, of which $25,000 has already been subscribed by the Southern California Edison Company, additional donations bringing the sum at the last report to $30,000. It is most desirable that these tests be carried out at as early a date as possible and it is to be hoped that those interested in establishing the results of such an experiment will make prompt response to the appeal for contributions.

CURRENT COMMENT

While Others Use Statistics

Mark Twain, in one of his books on the Mississippi, put in a word in favor of statistics. He had done a little arithmetic on the basis of some figures given on the yearly lengthening of that river and calculated that a century or so from now the stream would be so long that it would extend out over the Gulf of Mexico like a fishing pole, whereas some thousands of years ago, its mouth must have been several miles the other side of its source. "Thus," said he, "may we reap a rich reward of fancy from a very small investment in fact."

The quotation suggests the process of thought which led to the following editorial recently published in the San Francisco Examiner under the title, "Figures Show Grip of Monopoly in California":

> California is acknowledged to be the one State of the Union where electrical development has attained its highest mark.
>
> More than one-fourth of all America's hydro-electric power is developed and sold within our borders.
>
> Yet something is wrong—not with the power-output itself—but with the method by which this electricity is marketed to the people.
>
> H. E. Grant, local engineer, calls attention to interesting figures just issued by the United States Department of Commerce, showing very clearly the nature of that wrong.
>
> Here are the rock-bottom facts, covering the six-year period 1917-1922 in California:
>
> Output of current increased 58.3 per cent.
>
> Number of consumers increased 64 per cent.
>
> Cost to consumer increased 102 per cent.
>
> In other words, though the production of electricity increased very remarkably, the number of consumers increased yet more rapidly—and each consumer, therefore, used less power in 1922 than in 1917.
>
> And this reduction in the individual use of electricity is explained by the last figure, which shows that the cost of power in the six-year period rose nearly twice as fast as the production.
>
> And this in the State that lies right along the base of the Sierra Nevada range, the greatest and most economical water-power machine in the world, outside Niagara!
>
> Excessive rates furnish the reason, of course, why the average consumer used less electricity instead of more, in the midst of plenty. With electrical production increasing faster than the population, the individual consumption should have gone up. But the high rates interfered. . . .
>
> The private power companies are killing the goose that lays the golden egg. They are charging so much for electricity, in the world's richest electric-production field, that the average use of current is being cut down instead of stimulated.
>
> Electric power must be made cheap—its employment for heating, cooking, lighting and factory-driving must grow rather than diminish. Public ownership is the only thing that will ever accomplish this. . . .

The piece is a masterly example of the misuse of statistics. We pass over such unimportant inaccuracies as the exaggeration of California's water power resources. The figures taken from the government report are correct. That is to say, they were correct in the government report. The third statement that the "cost to consumer" had increased "102 per cent" does not mean what it says. What had increased 102 per cent was the gross income to the power company. In view of the fact that the number of consumers had increased 64 per cent in the same time, this means something like a 20 per cent increase in bill to the average consumer. Note that this does not mean a 20 per cent increase in cost. The little joker in the calculation is the fact that industrial, commercial and domestic consumers were lumped together and inasmuch as rates vary for these services, it is impossible from this figure to determine whether what actually occurred was that the consumer used more lighting service proportionately to power, or whether rates were actually raised. The fact that the number of consumers increased more rapidly than did the output of current, indicates that the former was the case. Here, too, entirely false deductions are made. The only conclusion which can be properly drawn from the figures presented is that the number of residence consumers had evidently increased at a greater rate during the six years in question than had the users of industrial power.

As a matter of fact, the consumption of electricity by the average home in California has greatly increased during the past six years. The Journal of Electricity not long ago conducted a survey of electrical conditions on the Pacific Coast, from which it was shown that the use of electricity in the average home in California had increased from 324 kw-hr. in 1915 to 374 kw-hr. in 1920. Rates in this state are not exorbitant—in fact, they are among the lowest in the country. Electricity in the West is cheaper than in any other section, the figures for 1922 being 1.57c. per kw-hr. generated on the average in the Pacific and Mountain states as against 2.82c. for New England and 2.17c. per kw-hr. for the United States as a whole. As a result of this advantage in rates, the average Westerner uses two and a half times as much electricity as his Eastern brother. These figures are for all classes of service—the discrepancy in favor of the West would be even greater were domestic use of electricity alone considered.

It seems hardly necessary to note that while electric rates increased slightly over the war period, they did not in any measure keep up with increases in other commodities, nor to mention that since the 1922 figures quoted there have been general decreases in rates for electric service. It is enough to indicate the large ingredient of "fancy" mixed with the slight investment of fact in the editorial and to

point out that the sample is typical of the questionable use made of statistics by those who would prove the difficult case for government ownership.

Service Without Price

Failure to consider the resources necessary for the maintenance of service is often the reason for public complaint of rates charged by utilities. The devotion of employees to duty and the measures necessary to maintain service have been characterized as "a service without price." The Mountain States Monitor in a recent editorial calls some of these things to the attention of the public. The paper says:

> Despite fire or storm or flood, a telephone operator sticks to her switchboard. A lineman risks life and limb that his wires may continue to vibrate with messages of business or social life. Other telephone employees forego comfort and even sacrifice health that the job may not be slighted.
>
> It is right that the public should receive this type of telephone service, that it should expect the employment of every practical improvement in the art, and should insist upon progress that keeps ahead of demand. Telephone users realize that dollars can never measure the value of many of their telephone calls. The public wants the service, and, if it stops to think, cheerfully pays the moderate cost.

Municipal Power and Costs of City Government

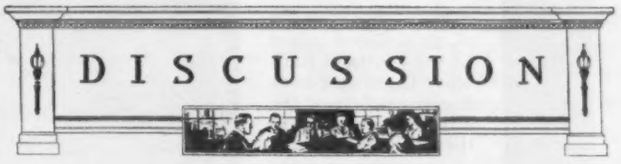
In view of the recent testimony on the part of representatives from the city of Los Angeles before the Senate Boulder Dam investigating committee to the effect that large sums of money were saved the citizens of that community through the operation of the city power and water departments, it is interesting to note the government census figures on comparative costs of city government in different parts of the United States. The P. G. and E. Progress points out that Detroit leads all American cities in per capita cost of government, that Seattle is second and that Los Angeles stands third, the actual figures being $120.30 for Detroit, $110.71 for Seattle and $99.34 for Los Angeles per inhabitant.

Why these three cities excelled in the spending of taxpayers' money was not discussed by the census bureau, but the power company publication explains that:

> Detroit owns a municipal street lighting plant and bought a street railway system and raised the fare in an effort to make municipal ownership pay.
>
> Seattle owns a street railway that cost $400,000 in three months last year, and also owns a light and power system.
>
> Los Angeles owns a light and power system.

Ding in Fresno, Calif., Republican.

Isn't it about time the management quit issuing those things?



Skagit Accounting System Not Separate from City Bookkeeping Department

To the Editor:

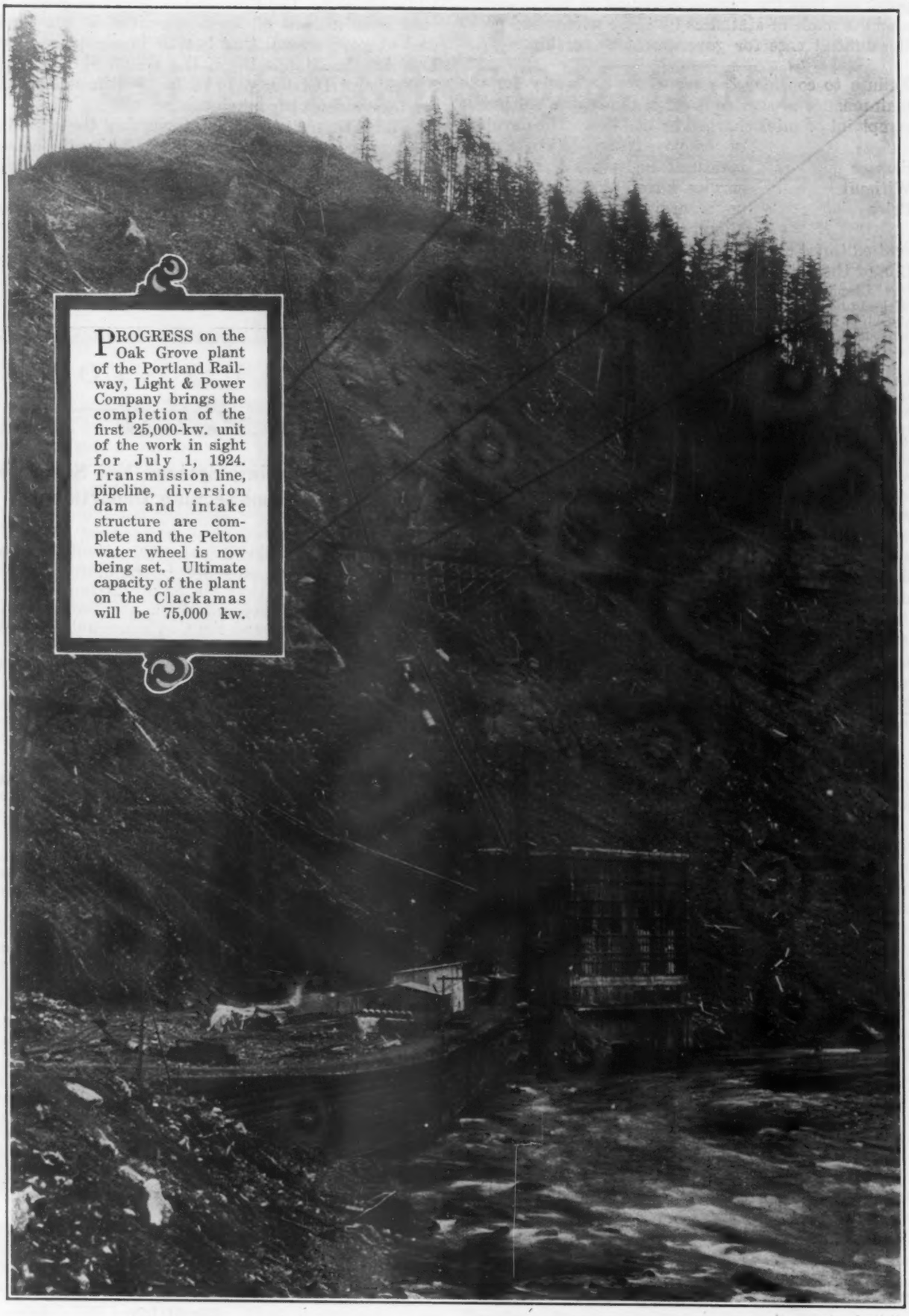
Sir: I would like to call your attention to an article appearing on page 180 in the March 1 issue, in which you state that the Skagit accounting system has been kept separate from the Seattle bookkeeping department and the City's accountants have had no access to the Skagit department's books. This statement is not correct and not true and I think your paper should correct the impression that this might give to those who are not familiar with the actual condition of affairs. The following gives you an idea of how the Skagit bills are audited and the accounts kept.

All bills and estimates are passed by the Chief Engineer of the Skagit River Development and then sent to the City Engineer for his approval and for the approval of the Board of Public Works. The Claim Sheet is then made out, which goes to the City Comptroller and then all bills and estimates are passed to the Auditing Committee, which consists of the Mayor, the President of the City Council, the Chairman of the Finance Committee of the Council and the City Comptroller. After this committee has passed on these bills and estimates they are sent to the City Comptroller for payment and he issues the necessary warrants on the City Treasurer. The Skagit office does not have the handling of any funds, nor the final say on the paying of bills and estimates. All vouchers and estimates are filed with the City Comptroller just the same as are the estimates and bills of any other department and the City accountants not only have full access to all papers but actually have these papers on file in their office.

No books of any kind are kept outside of the City Comptroller's office except a memoranda set of books which are kept in the Skagit office and merely serve for quick reference.

From the above you can see that the Skagit Accounting System has not been kept separate from the City bookkeeping department.

C. F. UHDEN, Chief Engineer,
Skagit River Development.



PROGRESS on the Oak Grove plant of the Portland Railway, Light & Power Company brings the completion of the first 25,000-kw. unit of the work in sight for July 1, 1924. Transmission line, pipeline, diversion dam and intake structure are complete and the Pelton water wheel is now being set. Ultimate capacity of the plant on the Clackamas will be 75,000 kw.

Why I Do Not Believe in Municipal Ownership

An Interview with Ole Hanson

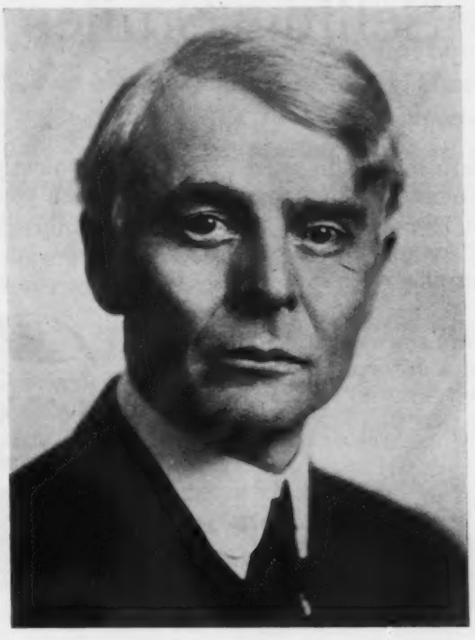
WHAT do I think of municipal ownership? Such ideas as I have are probably no different than those of thousands of other business men who have a grain of common sense. Theoretically, municipal ownership is absolutely right. So, too, are the League of Nations and Prohibition. Practically—well, they have their drawbacks.

No one can argue against the theory of municipal ownership. Interest rates for municipal bonds are less; they are tax exempt; there is a feeling that in all municipal bond issues the city is back of the securities. Municipally owned utilities pay no taxes. They can obtain franchises at no cost. Condemnation proceedings for them are a simple matter. Run properly, municipal enterprises should be able to sell their product cheaper than private companies run for profit.

But do they do this? In most cases, I do not think so. The reasons are obvious.

In the first place, municipal properties are immediately removed from the tax roll, thus increasing the burden upon the taxpayer in general. Every taxpayer shoulders a heavier burden. So, too, indirectly, does every citizen, whether or not he is benefited by municipal ownership of that particular city-operated enterprise. The purchasing power of every dollar he spends for food, clothes, rent and entertainment is reduced by that fractional sum necessary to make up the deficit in the public treasury caused by the loss to the city of the taxes formerly paid by the private company.

The loss of efficiency in the operating staff resulting from municipal ownership is a well recognized phenomenon. Private companies will pay for brains, and brains are one of the chief requisites for the successful operation of a business as technical and intricate as a public utility. The brains can be Republican or Democratic, so far as the public utility is concerned, just so the knowledge and performance are there. Municipal enterprises often will pay a higher rate than the current market price for hands, as evidenced by the support given them by labor. Municipal or government ownership is synonymous with more jobs, more pay, less work. They will not pay, however, for brains. I have seen cities with a $20,000,000 street car system, municipally owned, refuse to pay more than $5,000 a year for its head! Ridiculous, of course, but remember that salaries are fixed in municipalities not on account of what a man can earn, but on what the public thinks is a fair wage.



Former mayor of Seattle, under whose administration the street railway system of Seattle was purchased and the Skagit project was commenced, was once a strong advocate of public ownership. In this interview he tells, from the richness of his experience, why he does not believe in municipally owned public utilities.

[Photo by International Film Service.]

In the development and construction of public works, contractors are notoriously delinquent. They depend upon the municipality to change their contract and not enforce its penalties. Few, if any municipal utility projects are ever constructed within the original estimates. Political promises are made, an undertaking started and from that day on, the cry is for "money, money, money." "Another million and the job will be completed," is the plea. That million is voted, and another, and still more. Usually such an alarming total is built up that the public refuses to vote additional funds and the municipal project is left high in the air. This has happened in more than one instance.

Every man's job in a private company depends upon his making good. Either make good or leave, is the doctrine. This may seem crude but it is very efficacious. In a municipality the job often depends on political control, influence or votes. Because of this, municipal enterprises are usually over-manned. There are more men than jobs. Two job-seekers are placed on the payroll when one could do the work. There is a woeful lack of efficiency. The public pays the bill.

The public itself does not understand technical matters. Voters, as a mass, are more likely to listen to the oratorical spouting of a politician than the hard facts of a business man. In the furore before

a municipal election, municipal business cannot be kept out of politics. We have had many demonstrations of the utter futility of mixing business and politics. Like oil and water, they do not go together.

The politician's business is a business of holding office. He is on the job from two to four years. What would you think of a private company that changed managers that often? The politician has no personal responsibility. His constituents—the voters—are notoriously lax taskmasters. In order to hold office he often sacrifices the vital interests of the municipality for his personal political gain.

The cause for the spread of municipal ownership is largely attributable to the selfish desires of these same politicians who see in the control of utilities an opportunity for more power. They are aided by certain misguided theorists who actually believe that it will work. Another factor in the present situation is the fact that the public has not yet recovered from the domineering acts of some of the public utility companies of forty years ago. What is needed is a stronger public conviction of the truth in the statement, "more business in government and less government in business."

Selling Smiles

By H. Austin Adams*
Playwright and Publicist

WE hear and read everywhere today the word "sell," and it seems to have been given a new meaning. Ideas are "sold." A campaign is "sold." Whether it is "courtesy" or anything else, we speak of it in terms of selling and we mean by that,—"convincing."

But it has not been many years since those two words "sell" and "sold" had quite a different meaning. You remember "a sell." "I've been sold" meant, not the receiving of full value, but that you had been sold a gold brick.

The public remembers these words in their old meanings and it is suspicious. Your task is to educate them to the meaning you use them in today.

Courtesy is the great lubricant in human relations. You must use courtesy and you must use smiles to conquer the friction of suspicion. But your courtesy must not be alone the courtesy of affability. It must be from the heart; and a button won't give it to you, nor a mere smile, nor a campaign, nor a slogan.

The smile from the heart overcomes any sales resistance.

Your smiles must not be mere smiles, your courtesy mere suavity. They must not be empty things. If you have something that is sincere, a service that is honest, then your courtesy has a real foundation.

Your campaigns are good. Your buttons and slogans bring you together as soldiers for a cause.

The suave smile of the sharper is not true courtesy.

You march shoulder to shoulder and the weaker is helped by the stronger. You regiment your purpose and when you meet the enemy, the sceptical public, you must face them with smiles which ring true to the heart.

No one in the electrical industry, it seems to me, should fear that his service to the public is unwanted, that there is no real demand for it. You are the forerunners of development and your great secret, electricity, is binding the world together, running the railways, lighting communities, is opening up lands, turning the wheels of industry. It is relieving everywhere the drudgery of mankind.

Let your smiles be smiles of friendship. Friendship, the friendship of the public through courtesy, elevates you.

To me, the life of every man is a tragedy, because I know from experience the struggles, the heartaches, the battles humanity fights. And if you come before me smiling through them all, you come before me radiant, for I can see your body is covered with scars, received in the struggle. So when you can smile, gentlemen, and exercise courtesy, you lift humanity up with you to a higher plane.

*Extracted from an address before the San Diego Electric Club.

Manufacturing High Voltage Insulators on the Pacific Coast

By A. W. Pride

Porcelain Section, Emeryville, Westinghouse Electric & Manufacturing Company

TO SERVE better the Western utilities engaged in the rapid electrical development of the Mountain and Pacific Coast States, the Westinghouse Electric & Manufacturing Company has recently completed the only high voltage insulator factory in this territory. This is the first Westinghouse manufacturing unit in the West and an important addition to the industrial growth of the San Francisco bay district.

THE Emeryville Works of the Westinghouse High Voltage Insulator Company, now operating at its present maximum capacity, is located in a rapidly developing industrial center north of Oakland, California. One hundred men and women are employed in this plant, which is laid out to facilitate the manufacture of porcelain insulators by the most modern production methods by which the handling of the ware is reduced to a minimum.

Of the three principal raw materials used in the manufacture of high voltage porcelain bodies, feldspar of excellent quality is obtained from California deposits. The flint is obtained from Illinois and the clays are at present imported from England. Exhaustive research extending over the past two years at the ceramic laboratories of the Westinghouse company at East Pittsburgh and Derry, Pennsylvania, have proved that clays from California deposits are especially adaptable to high voltage porcelain insulator manufacture, and within the next few months a large proportion of the clays required will be obtained locally.

Preparation of Materials

The raw materials are unloaded and distributed direct from cars into six storage bins, each of 200 tons capacity. Smaller bins are provided for storage of the plaster of paris used in the molds and for clays and oxides used in preparing the glazes. The arrangement and subdivision of the raw material bins permit the separate storage of each shipment of material until the properties of the material have been checked and the shipment approved for use.

Charging scales of 1600 lb. capacity, carried on overhead monorail tracks, are used to weigh and convey the materials from the storage bins to the ball mills and blungers. The water used in the grinding and mixing of the materials is accurately measured through a flow meter and proportioned with proper allowance for the moisture content of the clays. Although the flint and feldspar are received ground so fine that for the most part they will pass through a 200 mesh lawn sieve, they are again ground wet in a ball mill before they are mixed with the clays. The china clay and ball clay properly proportioned are mixed in the blungers until all lumps are disintegrated and the fine particles suspended in the water. After the non-plastic materials are ground to the proper fineness they are forced from the ball mill into the blunger by compressed air and there mixed with the clays which have been previously suspended in water.

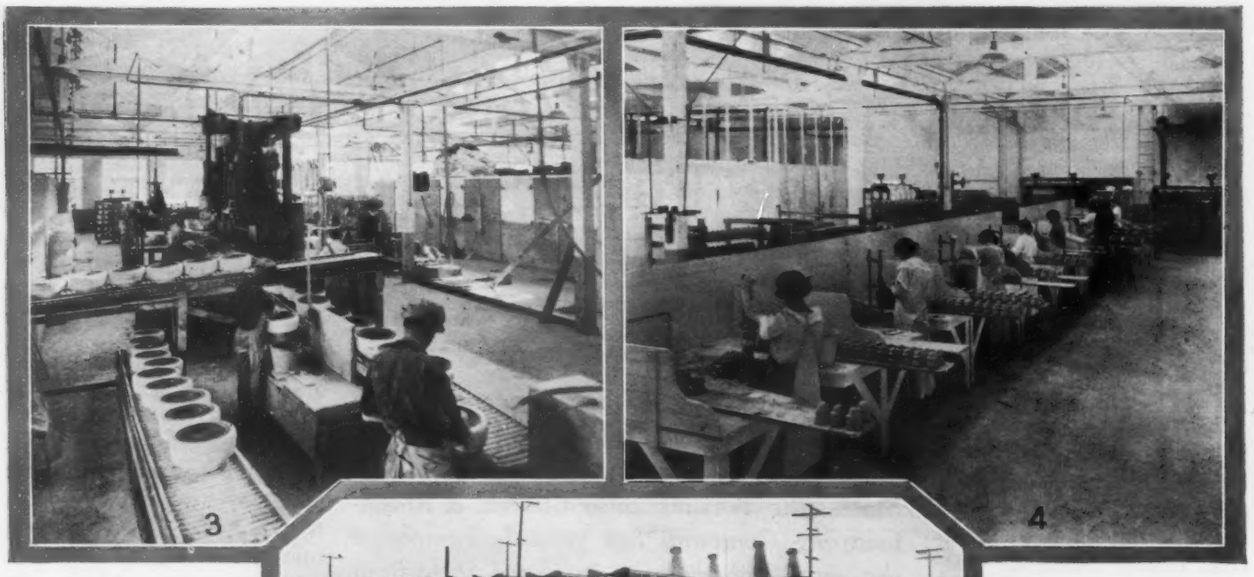
The blunged body or slip flows by gravity into storage cisterns, thence through vibrating lawns, and then through a magnetic separator to large storage tanks. While in storage the slip is continually agitated to maintain a homogeneous mixture and a uniform slip specific gravity.

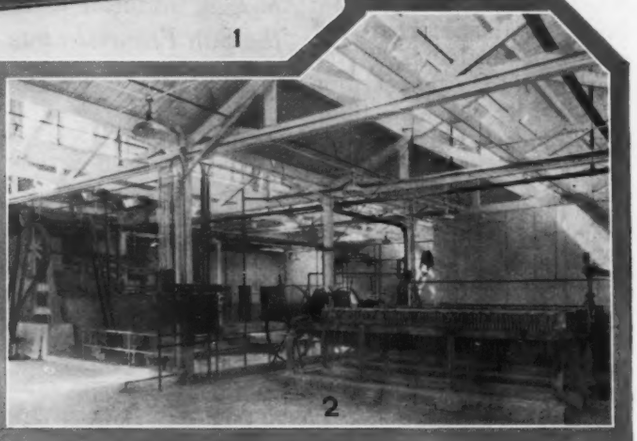
The refined slip is then pumped to leaf type filter presses on the floor level where by carefully controlled pressure the water is forced out through filter cloth and the slip reduced to a plastic body with approximately twenty-three per cent water content. After the filter cakes have been removed from the press the body is given a preliminary pugging and stored in large closed concrete cellars.

After removal from the storage cellars the body is again mixed in the pug mills and, through dies of proper dimensions and shapes, extruded in columns from which blanks of clay are obtained of the weight required for the type of insulator to be made.

Molding the Raw Clay

All of the pin type and suspension insulators are formed by the most modern presses in use for insulator manufacture. Blanks of the plastic clay are formed and placed in plaster of paris molds, shaped to conform closely to the top surfaces of the insulator unit. A hot revolving tool is then brought down on the clay in the mold, forcing the clay to flow under pressure and accurately shaping the under surface of the insulator. After the excess clay has been cleaned from the face of the mold and any necessary fettling operations completed the molds containing the pressed insulator parts are placed in a steam heated release dryer until the pressed ware can be removed from the mold and handled without distorting its shape. The drying of the plastic body,





HIGH voltage insulators for Western transmission systems are made in the western works of the Westinghouse High Voltage Insulator Company. An exterior view of the plant is reproduced above (1). Progressive shop views shown are: (2) body preparation department, where materials are reduced to a plastic body; (3) large hot press where insulator parts are formed; (4) tie wire grooves are cut and insulator top surfaces are trimmed here; (5) coating insulators with glaze strip after coming from final dryer; (6) mechanical load tests in excess of the normal service load are applied before the insulators are subjected to the final electrical tests.

accelerated by the absorption of moisture by the plaster of paris molds, results in sufficient shrinkage to permit easy removal from the molds.

After the pressed ware has been removed from the molds and further properly dried the surface which had been in contact with the mold is trimmed off and the tie wire grooves are cut in the pin type insulators.

The ware, which is now of the shape of the porcelain part required for firing, is conveyed through a tunnel dryer 90 ft. long. This drying is carried on by circulating air under very accurately controlled temperature and humidity conditions, the temperature being gradually increased and the humidity decreased as the drying progresses.

The dried insulator parts are then covered with the glazing slip, which has been previously prepared to give the desired color glaze, and which fuses into a glass at the firing temperature of the porcelain body, resulting in a surface that cleans readily. Those surfaces on which a cementing bond is required for the assembly with other porcelain or metal parts are covered with particles of ground body, which during firing are bonded to the porcelain by the fused glaze.

The Firing Process

The insulators are then placed in refractory containers or "saggers" which are stacked in the kiln, one on top of another in ring formation to a height of twelve feet. The kilns, each fifteen and one-half feet inside diameter, are fired with oil or gas.

The control of the firing cycle and final temperature is one of the most important operations in insulator manufacture. The temperature control during the early stages of firing is indicated by the use of electrical recording pyrometers. Pyrometric cone plaques of four cones each placed in all parts of the kiln indicate the temperature during the final stages of firing and assist in obtaining the desired firing cycles. Commercial standard pyrometric cones are made from ceramic materials accurately proportioned to give a series of temperature indications 36 deg. F. (20 deg. C.) apart when subjected to temperatures increasing at the rate commonly used.

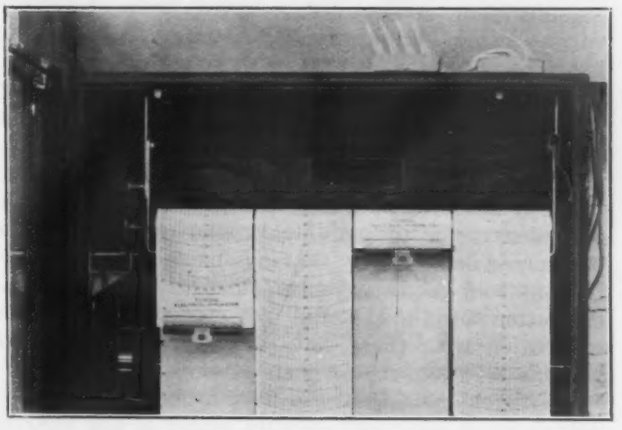
The temperature of the kiln is gradually increased to the maximum desired during a firing period of from 55 to 70 hours. After firing the kiln is cooled slowly to prevent internal strains which might result in the cracking of the porcelain.

After the inspection of the insulators drawn from the kiln they are subjected to a rigorous 60-cycle flashover test to eliminate parts having mechanical imperfections. The voltage of the 300-kva., 250,000-volt testing transformer used for the 60-cycle flashover and puncture tests is controlled from a panel, from which the operator has an unobstructed view of all tests and high voltage equipment. The uniform regulation of voltages up to 250,000 is accomplished through a 69-kva., 220-volt induction regulator with 100 per cent regulation. The test voltages are indicated at the control panel both by a crest voltmeter operated from the condenser bushing of the transformer and from a ratio voltmeter operated from a special voltmeter winding in the transformer.

The tested parts of multipart pin type insulators are then assembled and suspension insulator parts are assembled with hardware, mechanically mixed neat Portland cement being used. Resilient compounds are used to cushion mechanical stress which might be established as the result of unequal expansion or contraction when the component parts of units are subjected to sudden or extreme temperature changes. Care in the assembly and the accurate control of conditions during the setting of the cement are vital factors in determining the resistance of insulators to the severe temperature change stresses to which they are subjected in service.

Testing and Inspection

After proper setting of cement the units are cleaned, and the suspension insulators assembled in strings of six units each are tested in the pneumatically operated and controlled testing machine shown in the accompanying views. A mechanical load approximately 40 per cent of the ultimate strength of the insulators is applied before the units are subjected to the high frequency flashover test voltage obtained from the 200,000-cycle, 250,000-volt high frequency testing transformer.



Electrical recording pyrometer charts showing actual records of kiln temperatures. Pyrometric cone plaques before and after firing are also shown. The deformation at the end of the firing cycle of one of the cone plaques removed from kiln No. 4 is shown above the corresponding chart.

The assembled insulators are then tested under a 60-cycle flashover voltage, and after final inspection crated for shipment.

The completeness and capacity of the test equipment installed affords means of conducting the most searching routine and design tests on the insulators manufactured. Sphere spark-gaps of 25 cm. and 37.5 cm. diameter are available for the accurate calibration of meters and for investigation work.

A 50,000-lb. testing machine is used for combined mechanical and electrical design tests and for ultimate mechanical strength tests on samples from standard production. Porosity tests under pressures of 5,000 lb. per sq. in. or more are made in a high pressure container used in the testing machine.

Manufacturing equipment is provided for a large production, and additional kilns may be added as soon as a greater output is required.

The Responsibility of the Jobber for the Contractor-Dealer

By E. A. Kincaid

Associate Professor of Commerce, McIntyre School of Commerce, University of Virginia

THE blame for the troubles of electrical distribution has been placed by many at the door of the jobber. Mr. Kincaid in this issue discusses the responsibility of the jobber for the success of the electrical dealer and offers some suggestions as to the way out.

THE relationship of the jobber to the contractor-dealer has been the subject of much discussion among those engaged in the distribution of electrical goods. Various trade journals have also considered the subject from various angles. Charges have been made in these discussions and articles and the purport of some of these is that the jobber is largely responsible for the present status of the contractor-dealer situation. Let us now consider this subject for a short time. First, it has been said that the jobber has unwisely extended credit to individuals who call themselves contractor-dealers. By this it is meant that the jobber has sold goods at jobber's list without due consideration of the amount of credit extended in connection with these sales and without regard to persons to whom it has been extended.

This charge appears to have a good deal of currency among contractor-dealers, and it is also shared by some manufacturers' agents and others. By these it is alleged that almost anyone can obtain credit from the jobber and thus set himself up as a contractor-dealer. Naturally, it is inferred that the jobber is therefore responsible for the low standard of personnel that is found in many places in Pacific Coast territory where contractor-dealers flourish. It also follows that these individuals would seek to raise the standards of the retail outlets for goods by inviting the jobber to refuse to sell to the incompetent and the unfit.

Assuming, now, that it is true that the jobber extends credit and sells indiscriminately, what is the result of this practice? The contractor-dealer so favored will open up a small shop in some neighborhood or business section and stock with some appliances and fixtures. If he selects his location with care and is not permitted to overbuy, he may succeed. If he does succeed, a new outlet for appliances and other goods is secured and that is just what the jobber hoped to accomplish. By the very nature of his business the jobber is compelled to take such steps and assume the risk that the party favored with credit will fail. Not a few of them do fail and the jobber takes a loss. These losses are the cost of his efforts to secure new retail outlets that are exclusively electrical and thus a natural appendage of the jobber business.

If the jobber refuses to extend credit he is thereby taking the attitude that nothing will be gained by experimentation and risk. When he extends credit to some contractors who thus become dealers he is deliberately experimenting and taking a chance that the contractor will make good as a dealer. By assuming the credit risk in ten cases the jobber may be able to set up one additional successful retail outlet as the net result. If the jobber does not actually look at the matter in this way it seems to me that he might logically do so. To what better use could he put the credit that is within his control? In what other way is the number of exclusively retail outlets to be expanded? Is it not essential that the jobber shall develop these exclusively electrical outlets if thereby the industry can function more effectively? If the jobber adheres to the belief that contractor-dealer outlets are the most profitable for him in the long run, it seems that this must be given some weight. The jobber is in business for profits. Society wants him to make profits and the fact that he does so is the best evidence that he is performing a valuable economic service.

Second, it is by no means conclusive that the jobber does extend credit unwisely or that he sells indiscriminately. The man at the head of the jobber's credit department makes investigation of the application for credit and decides what can be done with it. There is every reason to assume that care is used in extending credit. The jobber is not looking for chances to sink money into the contracting-dealing business and he makes every effort to aid only those dealers who give promise of proper use of the credit extended. Here, as in every other business, the jobber's credit department will often make mistakes even after every precaution has been taken. The mistakes are the cases that attract comment and criticism. The instances where credit was extended constructively are not brought up.

In the third place, it must be pointed out that the jobber is under pressure to aid contractor-dealers to continue in business wherever he can. To make this clear, let it be assumed that the jobber refuses to sell to certain contractors who desire to become dealers as well. The applicant for goods on credit may go elsewhere and obtain what he seeks. It is

not unlikely that he will turn to some so-called "pirate" jobber and thus the regular jobber finds that his action has resulted in encouraging competition from a source which he would like to stifle. How is the regular jobber to preserve the market for electrical goods from destruction if he does not fight for merchandising standards? This is not an argument that only high-priced electrical goods should be sold. It is rather an argument that the public has a right to buy what it pleases, but it should be informed that there are standards of electrical merchandise that should be considered when choice is made. If the regular jobber handles only high grade merchandise he surely has the right to do what he can by fair competitive methods to drive out inferior goods and he will be the first to admit the same right to the so-called "pirate" jobber. The question as to whether or not it is fair for "pirate" jobbers and dealers to survive because the public does not know the difference between standard and other goods still remains to be faced, but that question cannot be disposed of now.

Finally, it is necessary to draw attention to the fact that when the jobber refuses to do what is within his power to open up new contractor-dealer outlets he runs the risk that consumers will be led to department stores in order to obtain electrical appliances. In other words, his action may build up business for these retail outlets. If he deliberately permits this to occur he must take the consequences, for he knows that the contractor-dealer will buy from the electrical jobber and he does not know that the department store will. If he cares to investigate, he can ascertain the fact that many department stores buy directly from the manufacturer. If the department store does this, then it is working to the elimination of the jobber insofar as such a course will accomplish that end. In previous articles it has been pointed out that jobber distribution is indispensable to the interests of small manufacturers scattered over a country of this size. But when the jobber loses the business that comes from large manufacturers, the costs of maintaining jobber distribution for small manufacturers will tend to rise and neither the manufacturer, the jobber nor the consumer is benefited.

What the Jobber Can Do

From what has been said it follows that the jobber's contribution to the solution of the contractor-dealer problem must come in some other way than through the extension of credits. One way in which it may come effectively has been demonstrated at Seattle where all factors in the electrical distributing business are cooperating for the good of each other, in the Seattle Electric Club. The jobbers have played and are now playing an important part in making that club a success, with the hope that a fraternal spirit will be developed between contractor-dealers and all other factors engaged in distributing electrical goods. It is particularly important that contractor-dealers be included in such organizations, for in that way they can take the measure of the men engaged in other phases of the electrical business, they can gain a point of view that is professional, they can come to have a spirit of unity that will make for the integrity of the trade as a whole. In such clubs it is possible for one man to see the other's point of view and thus to understand and share his burdens to some extent. Not the least of the benefits of such an organization is the fact that it makes possible a certain amount of educational work, the result of which should bring home to the contractor-dealer the necessity of adhering to sound merchandising standards. Moreover, there is also the opportunity that the contractor-dealer can be made to see the interdependence of the parts of the electrical marketing mechanism. Perhaps he can be made to appreciate the fact that a chain is no stronger than its weakest link and that when one part of the mechanism breaks down the whole machine suffers. Men make money in these days by helping other people to make money. No interest, no matter in what economic field, can live within itself. It is always a case of deciding whether the related interests shall hang together or hang separately. There is a great need in Pacific Coast territory for more of that broad and friendly spirit which animates the Seattle Electric Club. A narrow and selfish point of view will not solve the problem now uppermost in the electrical distributing field. I can find no better way to express the situation than to say that men of vision must take the lead and these men must be commercial statesmen.

The Contractor-Dealer's Point of View

The contractor-dealer cannot be abandoned without some consideration of the problems of that factor in the distribution of electrical goods from the contractor-dealer's own point of view. But the question naturally arises as to what sort of contractor-dealer shall speak for his own kind, taken as a whole. As to this there appears to be but one reasonable answer, to-wit, the status of contractor-dealers as a class must be viewed from the angle of one of their number who is doing business along sound lines and at the same time seeking to understand and solve the problems of the group. In other words, what do the best and most thoughtful contractor-dealers think of themselves and their fellows who engage in retail distribution of electrical goods while contracting?

When the subject is approached from this angle it appears that we have to consider several distinct classes of individuals. (a) There is the casual or "curbstone" contractor who has a shop in a garage or the basement of his own house. His equipment consists of a Ford and a few tools, some experience as a workman with other contractors and a license from the city where he operates. These casuals manage to get small jobs such as wiring cottages by cutting in on the estimate of the legitimate contractor. They regard the profits in contracting as high chiefly because they do not keep any accurate record of their own expenses. They buy wiring materials from jobbers and sell them to the home-owner at a profit, so they think. The casual may not have technical knowledge sufficient to enable him to install

heavy appliances such as ranges and water heaters and if that be the case he will dissuade the home-owner from including proper connection and wiring for these. They have been known to inquire of competent contractors as to how to install such appliances. If necessary to get a contract, the casual will not hesitate to induce the home-owner to reduce the number of outlets. This is his greatest offence against the legitimate contractor, the jobber and the power company. It is because of this practice that casuals are to be regarded as parasites on the industry and poor advisers of the home-builders. The proportion of casuals to all contractors runs quite high. In some Coast cities it is as high as sixty per cent.

The Legitimate Contractor

From the ranks of the casuals, as well as from other sources, (b) the regular and legitimate contractor is recruited. He is generally one of the more intelligent and better educated casuals who has managed to push into a field of larger usefulness. With his experience as a casual or as a workman with a large contractor he steps out and goes it alone. His tendency is to specialize in contracting for the wiring of large buildings such as hotels, office buildings, apartment houses and the like. Such a contractor may or may not engage in dealing on the side. He may have an electrical shop, but often he has nothing at all to do with the merchandising of appliances. Such a contractor makes his contracts by means of announcements of building permits, through building contractors, architects and engineers. He, therefore, does business on a large scale and seldom touches residential work unless it be for some syndicate that is putting up a large number of houses in a new addition, or something of the sort.

Enter the Contractor-Dealer

From the ranks of the casual contractor there is also graduated (c) the contractor-dealer. It would not be far from the truth to say that ninety per cent of all casuals aspire to become contractor-dealers. It is with these that the regular contractor-dealer has to deal. The casual contractor is more than likely to become a "pirate" contractor-dealer. He may not continue to work with such standards indefinitely, but he must get his start and it is to be regretted that so many of them consider "pirating" the best way to get started. The "pirate" buys from jobbers who carry low grade and, therefore, cheap merchandise. By so buying he is in a position to cut under the contractor-dealer who handles standard goods and sells at list without price-cutting. Some of these off-grade contractor-dealers have places of business, while others do all their merchandising directly from the jobber to the consumer without carrying stock. Since they do not do business in the regular or customary fashion their costs are thought to be less and for this reason their competition becomes deadly to the regular contractor-dealer. Thus the standards of the business both as to prices and quality of goods are torn to shreds and a contractor-dealer who aspires to do business on a leading business street in a neat and attractive shop stocked with high grade goods, finds himself confronted with a problem that is hard, if not impossible, to meet.

In consequence of these things the legitimate contractor-dealer will not be slow to admit (1) that there are too many contractor-dealers, (2) that the contracting-dealing business is not a paying one, (3) that it is necessary to discredit the "pirate" contractor-dealer with his prospective customer before the regular contractor-dealer can obtain a chance at the business. Finally (4) he will admit that, but for the profit that comes from the sale and installation of supplies, the merchandising end of the business could not be carried and (5) that the casual contractor is doing his level best to take all the profit out of this part of the contracting-dealing business.

The Jobber as Defendant

The story of the regular contractor-dealer who tries to do business as it should be done, on a legitimate cost-plus-profit basis, does not end with his account of his struggle to overcome the problems arising from within the ranks of the contracting-dealing business. He has certain counts against the jobber. In the first place he holds that the jobbers do, as a rule, sell to any contractor who holds a license. To this he objects, for he feels that he has a right to regard the jobber as a natural ally to whom he might look for cooperation. It is his notion that the jobber who thus sells is really striking at the very foundations on which his business rests. Then, he asserts that the jobber extends credit to these contractors and thus enables them to operate where operation would otherwise be impossible. He deplores the fact that jobbers are divided into two camps, association and non-association jobbers, because, divided in this fashion, there is necessarily less cooperation with the contractor-dealer who seeks to stabilize and perpetuate the logical outlet for appliances. He is inclined to hold that there is too much competition among jobbers and attributes this to the fact that there are too many jobbers, or else to the division of jobbers into two camps. At any rate, he is certain that he suffers because of this excessive competition and the resulting indiscriminate establishment of contractor-dealers without standards, without ethics and without concern for the future of the contracting-dealing business.

The Dealer's Remedy

For these problems the contractor-dealer of the better sort has certain remedies which he would like to have tried out. The first of these would cause the jobber to refuse to sell to the casual contractor and thus make it impossible for him to become a sort of dealer as well. To put the thing concretely, he would have the jobber refuse to sell to anyone who did not have a place of business and a minimum stock, say $1,000 in value. In the next place it is suggested that the state and city shall require all contractors to take an examination which must be passed before a license may be obtained. Not only that, but the fee for the license should be considerably increased over that ordinarily required and the licensee should

be required to give bond of such amount that any but the more competent will be deterred from entering the field. Finally, he would have an arrangement with organized labor whereby it is established that such labor will not work for a contractor who works with tools at his own job.

Recruiting from the Right Source

Now, it is not possible to enter into any extended discussion of the merits of the position taken by the type of contractor-dealer here under consideration. I have included this account because it is essential that all readers shall grasp the actual situation in Pacific Coast territory as it is seen by the several factors in distribution. It need not be said that there is much truth in what the legitimate contractor-dealer alleges. The outstanding thing to be said about it all is that the contractor-dealer outlet for electrical appliances is imperilled because the individuals who man these outlets are recruited from the wrong source. Ninety per cent of them are mechanics by inclination and experience. They do not make merchants and hence they do not provide efficient outlets for merchandise. If this outlet is to survive and serve the electrical distributing business it must draw men from a different source. The method of recruiting is wrong.

To emphasize this let me refer to an instance brought to my attention in Oregon. There a certain jobber spoke of a young contractor-dealer who had opened and was then conducting a prosperous contracting-dealing establishment in a certain city. But this young man had a foundation on which to build. He had been for a few years in a wholesale electrical house and he had then taken the road for the same house. In the course of his travels he learned of a business that could be made profitable, if operated along right lines. He resigned, bought the business and put his equipment behind it and made it go.

It can be done and when it is done it will have to be done along these lines. The future of the contractor-dealer outlet for electrical appliances is a question of the brains that will be drawn into the business.

The Proposed Text of the Erickson Bill

EDITOR'S NOTE—Read the following bill which will be presented to the voters of Washington this fall and then the analysis of its various clauses by the editors on page 246. Then make up your mind for yourself as to the importance of joining the fight against this measure.

AN ACT relating to and authorizing the establishment of public utility districts; providing for the construction, purchase, condemnation and purchase, acquisition, maintenance, conducting, operation, development and regulation by such districts of certain kinds of public utilities; providing methods of payment therefor; and providing for the creation of local assessment districts by, and defining, prescribing and regulating the powers, duties and government of, such utility districts.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF WASHINGTON:

Section 1. The purpose of this act is to authorize the establishment of public utility districts to conserve the water and power resources of the State of Washington for the benefit of the people thereof, and to supply at the lowest possible cost public utility service, including water for domestic, irrigation and power purposes, electricity for domestic, public, private and commercial lighting, heating, power and other purposes.

Section 2. Municipal corporations, to be known as Public Utility Districts, are hereby authorized for the purposes of, and may be established within the limits of the State of Washington as provided in this act.

Section 3. A group of qualified electors of any one or more counties of the State of Washington desiring to organize a public utility district shall present a petition for an election to the Secretary of State. Such petition shall be signed by no less than five hundred (500) qualified electors in all Class A counties, two hundred fifty (250) in all first and second class counties, and one hundred (100) in all other counties, situate within the district described in said petition, such petition to be filed with the Secretary of State at least thirty (30) days before the election at which the question is to be submitted, the time of holding which shall be specified in the petition. Such petition shall be printed on bond paper eight (8) inches wide and fourteen (14) inches long, ruled for twenty-five (25) signatures, with space for initials of registration officer, name, address and city or precinct, with the same certificate of registration officer at bottom of sheet as is or may be prescribed by State law for initiative petitions to the Legislature. It shall be the duty of the registration officers in cities or precincts where petitions are circulated to check and certify the same as initiative petitions are checked, without charge to circulators, and such check shall be sufficient evidence of validity for the Secretary of State. No person having signed such petition shall be allowed to withdraw his name therefrom after the filing of the same with the Secretary of State. The Secretary of State shall thereupon call a special election within the area embraced by, and at the same time specified in, the petition, and shall notify the local officers charged with the conducting of elections to proceed with their duties in respect thereto, and in the manner he certifies to the county auditors of the various counties the names of candidates for state and district officers, shall certify to each county auditor within the district the ballot title of the petition to be voted on at said election and the names of the candidates for president and commissioners of said proposed district. In submitting the question of the creation of the public utility district to the voters for their approval or rejection, the proposition shall be expressed on said ballot substantially in the following terms:

Public Utility District No.....YES

Public Utility District No.....NO

giving in each instance the number of the district as may be decided on by the Secretary of State. Except as herein otherwise provided, the manner of submission to the voters, the giving of notice, the holding and conduct of the election, the counting and canvassing of votes and returns thereof shall be governed by the general laws applicable to elections in respect to initiative bills. It shall be the duty of the Secretary of State, in the presence of the Governor, within twenty (20) days after such election, to canvass the votes and certify to the Governor the result thereof, and the Governor shall forthwith issue his proclamation as to the result of the election. If at the election for the creation of a public utility district a majority of the votes cast upon this proposition within said proposed district be in favor of the creation of said public utility district, said public utility district shall thereby be created and shall then be and become a municipal corporation of the State of Washington, with the powers prescribed by this act.

Section 4. The powers of the public utility district shall be exercised through a non-partisan commission, consisting of a president and four (4) commissioners, hereinafter referred to as the "Commission." No person shall be eligible to hold the office of president or commissioner of a public utility district unless he is a qualified elector of a county within the district, a freeholder therein, and has been a resident therein for a period of two (2) years, or who is employed by, or holds any official relation in respect to, or is interested in, any public service company, or who owns, or is interested in, the bonds, stocks, mortgages, securities, contracts or earnings thereof, or who is engaged in any occupation or business inconsistent with his duties as such president or commissioner. Whenever the creation of a public utility district is submitted to the voters as herein provided, there shall at the same time be elected a president for six (6) years and four (4) commissioners, two (2) for four (4) years and two (2) for two (2) years, the two (2) commissioners receiving the highest votes to serve for a period of four (4) years, and the two (2) receiving the next highest votes to serve for a period of two (2) years, and thereafter the president and commissioners shall hold office for six (6) years unless sooner recalled. Each of said terms shall date from twelve o'clock noon of the fourth Monday following the election. Candidates for president and commissioners shall file for election on blanks furnished by the Secretary of State and shall sign the same and pay a filing fee of thirty dollars ($30.00) at least thirty (30) and not more than sixty (60) days prior to the election. The names of candidates shall by the Secretary of State be certified to the respective local officers charged with the calling and conducting of elections and such names shall be printed on the ballot in alphabetical order, without party designation, names for president listed first. In the event of a vacancy in the commission or presidency, occasioned by recall or otherwise, such vacancy shall be filled by appointment by a majority vote of the commission, and the person thus elected shall hold office until the next election, at which time a successor shall be elected either to fill the unexpired portion of the term or a new term, as the case may be. Should such ad interim appointment not be made

by the commission within fifteen (15) days following the occurrence of the vacancy, the appointment shall be made by the Chief Justice of the Supreme Court of the State of Washington. A general election shall be held in each public utility district biennially, and a special election may be called by resolution of the commission. Until otherwise provided by law, all general elections held pursuant to this act shall be held on the second Tuesday of March, as provided in Section 5144, Remington's Compiled Statutes, as amended, for the holding of elections in certain political subdivisions of the state in Class A counties and counties of the first class, and, except as otherwise provided in this act, shall be conducted in the manner provided by the general election laws governing the election of state and county officers. The president, who shall devote his entire time to the work of the commission, shall be paid a salary of Five Hundred Dollars ($500.00) per month, and the commissioners shall each be paid a salary of Two Hundred Fifty Dollars ($250.00) per month, and shall also be paid for actual traveling expenses and disbursements while away from home on the business of the public utility district, their claims to be audited by the State Auditor: Provided, that in public utility districts with less than one hundred and fifty thousand registered voters, the president shall be paid a salary of Two Hundred Fifty Dollars ($250.00) per month, and the commissioners One Hundred Twenty-five Dollars ($125.00) per month. In the event a public utility district be formed in which part of the district is east of the summit of the Cascade Mountains and part is west, two (2) of the commissioners shall be residents of the east side and two (2) shall be residents of the west side, elected at large. The candidates shall file as candidates for commissioners for the side in which they reside and when two (2) commissioners are to be elected, one candidate shall be from each side and the one on each side receiving the highest vote in the entire district shall be elected. Before taking office, the president and commissioners shall take oath of office as required for the Governor and other state officers. The president shall be the presiding officer and shall call a meeting of the commission on the day the term of office begins to elect a member of the commission as secretary and organize to carry on the work of the commission, with headquarters at the county seat of the most populous county in the district. The commission shall by resolution adopt rules governing the transaction of its business and shall adopt an official seal, and no appropriation shall be made except by resolution.

Section 5. The public utility district shall have power:—

(a) To make a survey of the hydro-electric power, irrigation and domestic water supply resources of the district, and to compile comprehensive maps and plans showing the territory that can be most economically served by the various resources and utilities, the natural order in which they should be developed, and how they may be joined and co-ordinated to make a complete and systematic whole, and the commission shall, within the district, assume all the powers and duties of the Director of Conservation and Development which were formerly exercised by the State Hydraulic Engineer.

(b) To construct, condemn and purchase, purchase, acquire, lease, add to, maintain, operate, develop and regulate all lands, property, property rights, water, water rights, dams, ditches, flumes, aqueducts, pipes and pipe lines, water power, leases, easements, rights of way, franchises, plants, plant facilities and systems for generating electric energy by water power, steam or other methods, plant, plant facilities and systems for developing, conserving and distributing water for domestic use and irrigation, buildings, structures, poles and pole lines, and cables and conduits and any and all other facilities, and to exercise the right of eminent domain to effectuate the foregoing purposes or for the acquisition and damaging of the same or property of any kind appurtenant thereto, and for the purpose of acquiring the right to make physical connection with plants and plant facilities of any and all persons, corporations and municipalities, and such right of eminent domain shall be exercised and instituted pursuant to resolution of the commission and conducted in the same manner and by the same procedure as is or may be provided by law for the exercise of the power of eminent domain by the State of Washington, except in so far as such law may be inconsistent with the provisions of this act, and except that the public utility district's attorneys or attorney shall do, and they are hereby empowered to do, any and all acts which the Attorney General does or may do in the procedure provided by law for the State of Washington. It shall be no defense to a condemnation proceeding hereunder that the property sought to be taken or damaged is already devoted to a public use: Provided, that no public utility owned by a city or town shall be condemned hereunder. In any condemnation proceedings under this act, just compensation shall be made for property taken: Provided, that the commission, judge and jury may consider tract assembling values and severance damages, and shall consider the values placed upon such property for taxation, and in respect to property, plants and facilities of persons and corporations using public highways for the furnishing of public service without franchises, shall consider in determining the value thereof the fact that such property, plants and facilities are subject to be removed from such highways by reason of being so operated without such franchises.

(c) To construct, purchase, condemn and purchase, acquire, add to, maintain, conduct and operate water works and irrigation plants and systems, within or without its limits, for the purpose of furnishing such public utility district, and the inhabitants thereof, and any other persons, including public and private corporations within or without its limits, with an ample supply of water for all uses and purposes, public and private, including water power, domestic use and irrigation, with full and exclusive authority to sell and regulate and control the use, distribution and price thereof.

(d) To purchase, within or without its limits, electric current for sale and distribution, and to construct, condemn and purchase, purchase, acquire, add to, maintain, conduct and operate works, plants, transmission and distribution lines and facilities for generating electric current, operated either by water power, steam or other methods, within or without its limits, for the purpose of furnishing said public utility district, and the inhabitants thereof, and any other persons, including public and private corporations, within or without its limits, with electric current for domestic, public, private and commercial heating, lighting, power and other purposes, with full and exclusive authority to sell and regulate and control the use, distribution and price thereof, together with the right to purchase, handle, sell or lease meters, lamps, motors, transformers and any and all other kinds of equipment and accessories of every nature and kind whatsoever necessary and convenient for the use, distribution and sale thereof: Provided, that the commission shall not supply water to a privately owned utility for the production of electric energy, and shall not supply, directly or indirectly, to privately owned public utilities which sell electric energy or water to the public more than twenty (20) per cent of the total amount of electric energy or water under its control and contracts therefor shall not extend over a longer period than five (5) years, or be renewed before one (1) year prior to their expiration.

(e) And for the purposes aforesaid, it shall be lawful for any public utility district so organized to take, condemn and purchase, purchase, and acquire any and all public and private property, franchises and property rights, including state, county and school lands and property and littoral and water rights, for any of the purposes aforesaid, and for railroads, tunnels, pipe lines, aqueducts, transmission lines, telephone systems and lines, and any and all other facilities necessary or convenient; and, in connection with the construction maintenance or operation, of any such utility or utilities, to acquire by purchase or condemnation and purchase the right to divert, take, retain and impound and use water from or in any lake or watercourse, regardless of whether such lake or watercourse or the water therein be public or private, navigable or non-navigable, or held, owned or used by the State, or any subdivision thereof, or by any person or corporation for any public or private use, proprietary or governmental, or any underflowing water within the State; and such public utility district is hereby authorized and empowered to erect and build, within or without its limits, dams or other works across any river or watercourse, or across or at the outlet of any lake, up to and above high water mark; and, for the purpose of constructing or laying aqueducts or pipe lines, dams or waterworks or other necessary structures in storing, retaining and distributing water as above provided, or for any of the purposes provided for by this act, such public utility district shall have the right to occupy and use the beds and shores up to the high water mark of any such lake, river or watercourse, and to acquire by purchase or by condemnation and purchase, or otherwise, any water, water rights, easements or privileges named in this act or necessary for any of said purposes, and any such public utility district shall have the right to acquire by purchase or condemnation and purchase, or otherwise, any lands, property or privileges necessary to be had to protect the water supply of such public utility district from pollution: Provided, that should private property be necessary for any such purposes, or for storing water above high water mark, such public utility district may condemn and purchase or purchase and acquire such private property. Such public utility district shall have power to build and maintain inter-tie lines connecting its power plant and distribution system with the power plant and distribution system owned by any other public utility district, or municipal corporation, or to connect the power plants and distribution systems owned by any municipal corporation in the district, and from any such inter-tie line to sell electric energy to any city, individual, local utility district, or corporation, public or private, and, by means of aqueducts or pipe lines, to conduct the water for all purposes, and, by means of transmission or pole lines, to conduct electric energy throughout the State, and to construct and lay said aqueducts, pipe or pole lines, and transmission lines along and upon public highways, roads and streets, and to condemn and purchase, purchase or acquire, lands, franchises and rights of way necessary for the same.

(f) To contract indebtedness or borrow money for corporate purposes on the credit of the corporation or the gross receipts of the public utilities thereof, and to issue general or utility bonds therefor, bearing interest at a rate not exceeding six (6) per cent per annum, payable semi-annually; to purchase with surplus funds local utility district bonds of districts created by the commission and sell the same, giving preference to residents of the district, and to create a revolving fund to insure the prompt payment of all local utility district bonds.

(g) To raise revenue by the levying of an annual tax on all taxable property in such public utility district not exceeding two (2) mills in any one year, exclusive of interest and redemption for general bonds. The commission shall prepare a proposed budget of the contemplated financial transactions for the ensuing year and file the same among the records of the commission on or before the second Monday in September. Notice of the filing of said proposed budget and the date and place of hearing on the same shall be published in one issue of a newspaper printed and in general circulation in said district seven (7) days prior to the hearing upon said proposed budget. On the first Monday in October the commission shall have a public hearing on said proposed budget at which any taxpayer may appear and be heard against the whole or any part of the proposed budget. Said hearing may be continued from day to day until concluded, but not to exceed a total of five (5) days. Upon the conclusion of said hearing the commission shall by resolution adopt the budget as finally determined, and fix the final amount of estimated expenditures for the ensuing year. Taxes levied by the commission shall be certified to and collected by the proper county officer of the respective counties included within the district in the same manner and subject to the same restrictions and procedure as is or may be provided by law for the certification and collection of county taxes. The commission is authorized prior to the receipt of taxes raised by levy, to borrow money or issue warrants of the district in anticipation of the revenue to be derived by such district from the levy taxes for the purposes of such district, and such warrants shall be redeemed from the first money available from such taxes when collected, and such warrants shall not exceed the anticipated revenues of one (1) year, and shall bear interest at a rate of not to exceed seven (7) per cent per annum.

(h) To enter into any contract with the United States Government, or any state, or other utility district, or any department of these governing bodies, which will benefit the public utility district of these governing bodies in carrying out any of the powers authorized by this act.

(i) To acquire by gift, devise, bequest, lease or purchase, real and personal property necessary or convenient for the purposes of the district or any local district therein.

(j) To make contracts, employ engineers, attorneys and other technical or professional assistance, and to hire clerks, laborers and other employees; to print and publish information or literature, and to do all other things necessary to carry out the provisions of this act.

(k) To sue and be sued in any court of competent jurisdiction: Provided, that all suits against the public utility district shall be brought in the county in which the commission maintains its headquarters: Provided, further, that no suit for damages shall be maintained against such public utility district except on the basis of a claim therefor filed with the commission of such district complying in all respects with the terms and requirements for claims for damages filed pursuant to general law against cities of the second class.

(l) By resolution to establish and define the boundaries of local assessment districts to be known as Local Utility District No..... for the distribution under the general supervision and control of the commission, of water for domestic use and (or) irrigation, electric energy, in like manner to provide for the purchasing or otherwise acquiring, or constructing and equipping distribution systems for said purposes and extension thereof, and to levy and collect in accordance with the special benefits conferred

thereon special assessments and re-assessments on property specially benefited thereby, for paying the cost and expense of the same, or any portion thereof, as herein provided and to issue local improvement bonds and (or) warrants to be repaid wholly or in part by collection of local improvement assessments.

The commission shall by resolution establish the method of procedure in all matters relating to local utility districts. Except as herein otherwise provided, all matters and proceedings relating to the local utility district, the levying and collection of assessments, the issuance and redemption of local improvement warrants and bonds and the enforcement of local assessment liens hereunder, shall be governed, as near as may be, by the laws relating to local improvements for cities and towns: Provided, that no protest against a local utility district improvement shall be received after twelve o'clock noon of the day set for hearing. All local utility district assessments becoming a lien upon any property in any public utility district shall be collected by the County Treasurer of the county in which such property is situated. As soon as the commission shall approve the assessment roll, it shall deliver a copy of the same to the County Treasurer in which the particular property is situated and, in case the property is situated in more than one county, it shall segregate the property of the said assessment roll, and deliver to each County Treasurer the part which contains the property within their respective counties. From and after such delivery the assessments therein provided shall be and constitute liens upon the properties against which the same were respectively assessed. In all other respects, the duties and powers imposed and conferred by the local improvement laws upon municipal and county officers shall be performed by the president of the commission, in so far as the same shall relate to the enforcement of such local improvement laws in respect to local utility districts created hereunder.

Section 6. Whenever the commission shall deem it advisable that the public utility district purchase, purchase and condemn, acquire, or construct any such public utility, or make any additions or betterments thereto, or extensions thereof, the commission shall provide therefor by resolution, which shall specify and adopt the system or plan proposed, and declare the estimated cost thereof, as near as may be, and specify whether general or utility indebtedness is to be incurred, the amount of such indebtedness, the amount of interest, and the time in which all general bonds (if any) shall be paid, not to exceed thirty (30) years. In the event the proposed general indebtedness to be incurred will bring the indebtedness of the public utility district to an amount exceeding one and one-half per cent (1½%) of the taxable property of the public utility district, the proposition of incurring such indebtedness and the proposed plan or system shall be submitted to the qualified electors of said public utility district for their assent at the next general or special election held in said public utility district.

Whenever the commission (or three-fifths of the qualified voters of such public utility district, when it is necessary to submit the same to said voters) shall have adopted a system or plan for any such public utility, as aforesaid, and shall have authorized indebtedness therefor, general or public utility bonds may be issued, as hereinafter provided. Said general bonds shall be serial in form and maturity and numbered from one upwards consecutively. The various annual maturities shall commence with the second year after the date of issue of such bonds. The resolution authorizing the issuance of the bonds shall fix the rate of interest the bonds shall bear, said interest not to exceed six (6) per cent, and the place and date of payment of both principal and interest. The bonds shall be signed by the president of the commission, attested by the secretary of the commission, and the seal of the public utility district shall be affixed to each bond but not to the coupon: Provided, however, that said coupon, in lieu of being so signed, may have printed thereon a fac simile of the signature of such officers. The principal and interest of such general bonds shall be paid from the revenue of such public utility district after deducting costs of maintenance, operation and expenses of the public utility district, and any deficit in the payment of principal and interest of said general bonds shall be paid by levying each year a tax upon the taxable property within said district sufficient to pay said interest and principal of said bonds, which tax shall be due and collectible as any other tax. Said bonds shall be sold in such manner as the commission shall deem for the best interest of the district. All bonds and warrants issued under the authority of this act shall be legal securities, which may be used by any bank or trust company for deposit with the State Treasurer, or any County or City Treasurer, as security for deposits, in lieu of a surety bond, under any law relating to deposits of public moneys. When the commission shall not desire to incur a general indebtedness in the purchase, condemnation and purchase, acquisition, or construction of any such public utility, or addition or betterment thereto, or extension thereof, it shall have the power to create a special fund or funds for the sole purpose of defraying the cost of such public utility, or addition or betterment thereto, or extension thereof, into which special fund or funds it may obligate and bind the district to set aside and pay a fixed proportion of the gross revenues of such public utility, or any fixed amount out of, and not exceeding a fixed proportion of, such revenues, or a fixed amount without regard to any fixed proportion, and to issue and sell bonds or warrants bearing interest not exceeding six (6) per cent, per annum, payable semi-annually, executed in such manner, and payable at such times and places, as the commission shall determine, but such bonds or warrants, and the interest thereon, shall be payable only out of such special fund or funds. In creating any such special fund or funds, the commission shall have due regard to the cost of operation and maintenance of the plant or system as constructed or added to, and to any proportion or part of the revenues previously pledged as a fund for the payment of bonds or warrants, and shall not set aside into such special fund or funds a greater amount or proportion of the revenues and proceeds than, in its judgment, will be available over and above such cost of maintenance and operation and the amount or proportion, if any, of the revenues so previously pledged. Any such bonds or warrants, and interest thereon, issued against any such fund, as herein provided, shall be a valid claim of the holder thereof only as against the said special fund and its fixed proportion or amount of the revenue pledged to such fund, and shall not constitute an indebtedness of such district within the meaning of the constitutional provisions and limitations. Each such bond or warrant shall state on its face that it is payable from a special fund, naming such fund and the resolution creating it. Said bonds and warrants shall be sold in such manner as the commission shall deem for the best interests of the district, and the commission may provide in any contract for the construction and acquisition of a proposed improvement or utility that payment therefor shall be made only in such bonds or warrants at the par value thereof. In all other respects, the issuance of such utility bonds or warrants and payment therefor shall be governed by the public utility laws for cities and towns.

Section 7. All proceedings of the commission shall be recorded in a book or books kept for such purpose, which shall be public records. Three (3) members of the commission shall constitute a quorum, but no resolution shall be passed without a majority vote of the whole commission and regular meetings shall be held on the first Monday of each month. Special meetings may be called at any time by the president, or the president shall call a special meeting at any time upon written request of three (3) commissioners.

All materials purchased and work ordered, the estimated cost of which is in excess of Five Thousand Dollars ($5,000.00), shall be by contract. Before awarding any such contract, the commission shall cause to be published in some newspaper within the public utility district a notice for at least ten (10) days before the letting of said contract, inviting sealed proposals for such work, plans and specifications for which must at the time of the publication of such notice be on file at the office of the public utility district, subject to public inspection: Provided, however, that the commission may at the same time, and as part of the same notice, invite tenders for said work or materials upon plans and specifications to be submitted by bidders. Such notice shall state generally the work to be done, and shall call for proposals for doing the same, to be sealed and filed with the commission on or before the day and hour named therein. Each bid shall be accompanied by a certified check, payable to the order of the commission, for a sum not less than five per cent (5%) of the amount of the bid, and no bid shall be considered unless accompanied by such check. At the time and place named, such bids shall be publicly opened and read, and the commission shall proceed to canvass the bids, and may let such contract to the lowest responsible bidder upon plans and specifications on file, or to the best bidder submitting his own plans and specifications: Provided, however, that no contract shall be let in excess of the estimated cost of said materials or work, or if, in the opinion of the commission, all bids are unsatisfactory, they may reject all of them and re-advertise and in such case all checks shall be returned to the bidders; but if such contract be let, then, and in such case, all checks shall be returned to the bidders, except that of the successful bidder, which shall be retained until a contract shall be entered into for the purchase of such materials or doing such work, and a bond to perform such work furnished, with sureties satisfactory to the commission, in the full amount of the contract price, between the bidder and the commission, in accordance with the bid. If such bidder fails to enter into said contract in accordance with said bid and furnish such bond within ten (10) days from the date at which he is notified that he is the successful bidder, the said check and the amount thereof shall be forfeited to the public utility district.

Every contractor and sub-contractor performing any work for said public utility districts or local utility districts within said public utility district shall pay or cause to be paid to its employees on such work or under such contract or sub-contract not less than the minimum scale fixed by the resolution of the commission in the notice and call for bids on such work. The commission in fixing such minimum scale of wages shall fix the same as near as possible to the current prevailing and going wages within the district for work of like character.

Section 8. The County Treasurer of each county within the district shall maintain a fund to be known as the "Public Utility Fund," into which shall be paid all moneys received by him from the collection of taxes in behalf of such district. The State Treasurer shall maintain in respect to each district a fund to be known as the "Public Utility District No..... Fund," into which shall be paid all moneys received by him from the collection of taxes in behalf of such public utility district by the county treasurers. The State and County Treasurers shall also maintain such other special funds as may be prescribed by the commission, into which shall be placed such moneys as the commission may by its resolution direct, and all moneys due the public utility district shall be paid to the State Treasurer, or such County Treasurer as he may direct. All disbursements, including salaries of president and commissioners, shall be made by the State Treasurer on warrants drawn by the State Auditor, who shall draw the same upon the order of, or voucher approved by, the commission. The commission shall keep an account for each unit or utility and fix rates with due regard to making it ultimately self-sustaining, and shall make annual reports to the Governor of the State of the affairs of the commission, giving comprehensive statement of receipts, expenditures, assets, liabilities, extensions and betterments.

Section 9. Any county or public utility district of a lesser population may be annexed to and become part of another public utility in the following manner:

Five per cent (5%) of the registered voters resident of the county or district proposed to be annexed may petition the commission of the public utility district to which they desire to be annexed to approve and cause the question of annexation to be submitted to the legal voters of the territory proposed to be annexed. Such petition shall define the limits of the territory proposed to be annexed to such public utility district. Upon the filing of such petition with the commission, such commission shall provide for a hearing to be held for the discussion of such proposed annexation at the office of said commission, and shall give due notice of such hearing by publication in a weekly newspaper published in said public utility district for at least two (2) weeks prior to the hearing. If said commission shall concur in the petition, the County Commissioners (or, in the case of a district, its commission) in the county or district which is seeking to be annexed shall, upon notice from the commission, submit the proposition of annexation to the voters of said county or district at the next general election. Upon the adoption of said proposition of annexation by a majority of the voters voting on said proposition, the County Commissioners (or the commission) shall certify the results of the election to the commission of the annexing district, and the same shall be entered upon the records of the commission thereof. Thereupon said county or district shall become annexed to, and become a part of, the greater public utility district. When a smaller public utility district is annexed or consolidated with a larger one, all utilities of the smaller public utility district shall be operated by the commission of the greater district: Provided, that no property of either of the former public utility districts so consolidated shall ever be subjected to a general tax to pay any portion of any indebtedness of either of the other of such former public utility districts contracted prior to, or existing at the date of, such consolidation.

Section 10. If any part of this act shall be adjudged to be invalid or unconstitutional, such adjudication of invalidity or unconstitutionality shall not affect the validity or constitutionality of the act as a whole, or of any part thereof not adjudged invalid or unconstitutional.

Section 11. This act shall not be deemed or construed to repeal existing acts relating to the construction, maintenance and operation of public utilities by municipal corporations, but shall be deemed to be supplemental thereof.

Shall the State Go into the Power Business in Washington?

TEXT of the proposed "Erickson Bill" providing for the establishment of public utility districts in Washington is given on page 243 and is here followed by comments on the dangers of the measure. This in the main will be the form in which the bill will be presented to the voters this fall although minor changes may later be made.

UNLIKE the California proposed water and power act of 1922 the Washington measure is not a constitutional amendment but an initiative statute. The Washington act authorizes the establishment of municipal corporations to be known as public utility districts which may include any one or more counties of the state. To form such a district a petition signed by a certain number of qualified electors in each of the counties to be included shall be filed; whereupon a special election within the area specified in the petition shall be called. If, at the special election, the majority of the votes cast upon the proposition be in favor of the creation of such a district, the district shall then become a municipal corporation with the powers prescribed by the act.

No Adequate Salaries

The powers of the district shall be exercised by a "non-partisan" commission, consisting of a president and four commissioners, who shall hold office for six years. The first commissioners are elected, some for six years, some for four years and some for two years, so that thereafter the terms of the commissioners shall overlap. The president, who shall devote his entire time to the work of the commission, is provided with a salary of $500 a month and the other commissioners are to receive $250 a month. All the commissioners shall be paid for actual expenses incurred while away from home on business for the district. In districts with less than 150,000 registered voters the president shall receive $250 a month and the commissioners $125 a month. These salaries could hardly be called exorbitant. On the contrary, they are so low as almost to insure incompetent management. Even some of the smaller municipalities have discovered that a cheap manager is dear at any price. Stockton, California, pays its city manager $20,000 a year and Sacramento is raising the city manager's salary from $10,000 to $15,000. Owing to the method of selection, the choice of commissioners goes to the locality within the district having the largest voting power, which would mean that the large cities would be well represented on such a board, and their interest in consequence safeguarded at the expense of the rural districts.

Powers of Public Utility District

The powers of a public utility district, under the Washington measure, are in brief:

To construct, condemn, purchase or otherwise acquire or lease and maintain, operate, develop and regulate any form of property for generating electric energy by water power, steam or other methods, or for conserving, developing or distributing water for any purpose; provided that no public utility owned by a town shall be condemned and just compensation must be made for any property taken.

Property may be acquired and operated either within or without the district for the purpose of furnishing the district and its inhabitants and any other persons "including public and private corporations within or without its limits" with water or power.

No Regulation of Rates

The district has "full and exclusive authority to sell and regulate and control the use, distribution and price" of water and power sold by it. In other words, these public utility districts, like all public ownership schemes, will not be subject to regulation by any neutral body. The agency that operates the business and supplies the service controls the price. Not only may rates discriminate arbitrarily between industries and types of service, but the commission has power to discriminate in rates between various communities. It also has the power by condemnation or negotiation to eliminate competition and thereby establish the condition of unregulated monopoly which proved so unsatisfactory in the days before real regulation.

The commission, however, shall not supply water to a privately-owned utility for the production of electric energy and shall not supply directly or indirectly to a privately-owned utility more than twenty per cent of the electric energy under its control, and contracts therefor shall not extend over a longer period than five years or be renewed prior to one year before expiration. This is a characteristic provision in such schemes. The utmost powers of oppression are conferred on the commission on the theory that it will be a beneficent tyranny but the commission is not trusted to the extent of permitting it to sell service to private utility corporations without hampering restrictions. Such provisions are a sop to the corporation-baiters, express a fundamental distrust of political management of utility service, and are at variance with the bureaucratic scheme of acts like the Washington measure.

A district is permitted to tie-in with a power plant or distribution system of any other district or municipal corporation and it may conduct water or power to any part of the state and sell water or power in any part of the state. In other words, a district has all the powers of a private utility corporation besides additional powers that no private utility corporation would think of asking for.

Dangerous Taxing Power

A district may contract indebtedness or borrow money on either the credit of the district or the gross receipts of the public utilities thereof and issue, as the case may be, either general bonds, which are obligations of the district, or utility bonds, which are obligations of the utility service.

In addition to thus raising revenue by borrowing, the district, by its commission, may levy an annual tax on all taxable property in the district not to exceed two mills in any one year "exclusive of **interest and redemption for general bonds.**" That is to say, the commission may tax the district sufficiently to meet the interest and sinking fund obligations of the general bonds and is not required to depend on the receipts of the utilities to meet such general bonds; and on top of that the commission may levy a general tax of two mills for general purposes. The act provides, however, that principal and interest of general bonds shall be paid out of the **net** revenue of the district and any deficit out of the taxes. There is no limitation on the amount of general bonded indebtedness that may be incurred but if the proposed general indebtedness to be incurred will bring the indebtedness of the district to an amount exceeding 1½ per cent "of the taxable property of the public utility district," the proposition of incurring such an indebtedness shall be submitted to the electors at the next general or special election. Bonds shall not be issued in that event unless three-fifths of the qualified voters of the district shall have authorized the general indebtedness and approved the system or plan. Evidently the limitation on general indebtedness that may be incurred by the commission without submitting the question to the electors is 1½ per cent of the actual, and not merely the assessed value of the taxable property.

No Bond Limit

The initiative statute imposes no limit to the amount of bonds that may be issued by the commission without a vote of the people on the credit exclusively of the revenue of the utility bonds. The commission shall have power to create a special fund for the sole purpose of defraying the cost of any utility or extension thereof, into which special fund it may bind the district to pay a fixed amount of the **gross** revenue of such utility. Such bonds shall be payable only out of such special fund and shall not constitute an indebtedness of the district. The commission must not set aside into such special fund a greater amount or proportion of the revenues than in its judgment will be available over and above the cost of maintenance and operation. No provision is made for taking over the utility service by the holders of such utility bonds if the special fund fails to meet the obligations of the bonds. Obviously, if the utility service is not a success, the expense of maintenance and operation must have a first call on the entire gross revenue else the utility would come to a stop. Such utility bonds, therefore, are merely promises to pay out profits, if there are any profits.

Other Special Powers

The measure provides for the purchase of materials and the doing of work in excess of $5,000 by contract let to the lowest responsible bidder, and the act provides that every contractor or sub-contractor performing any work for such district shall pay to its employees under such contract or sub-contract not less than the minimum scale fixed by the commission in the notice and called for in its bids.

Prior to the receipt of taxes raised by levy, the commission may borrow money or issue warrants on the district in anticipation of the revenue to an amount not to exceed the anticipated revenues of one year, and such warrants shall be redeemed from the first money available from such taxes when collected. The commission has the widest powers in making contracts and engaging employees, and there is a special grant of power "to print and publish information or literature," which means propaganda in favor of the district, its works and its commission.

All suits against the district must be brought in the county in which the commission maintains its headquarters.

The commission may also establish local assessment districts within the general district for the distribution under the general supervision or control of the commission of water or electric energy for any purpose and to provide for the purchase or acquisition otherwise of distribution systems for said purposes, and to levy and collect, in accordance with the special benefits conferred on districts, assessments on the property especially benefited thereby; and the commission may also issue local improvement bonds or warrants to be collected wholly or in part by local assessments.

No Recourse for the Public

It is clear that in each public utility district (and there is nothing to prevent a public utility district from including the entire state) the commission may exercise very great powers, including the power to tax, the power to contract general indebtedness of the district and the power to pledge the revenues of the utility services, the power to impose local assessments on territory within the district deemed especially benefited, and the power to fix its own rates and determine for itself the character of the service it shall give.

The vices of the Washington measure are the vices of public ownership projects generally: political and bureaucratic control of industries through governmental agencies; freedom from regulation; the power to eliminate the corrective influence of competition, although competition is the public's only protection where there is no regulation; the power to tax the people to meet expenses and losses in more or less speculative enterprises which are proprietary and not governmental in character.

A Practical System of Accounting for Contractor and Dealer

By F. V. Mitchell

IN my article published in the Aug. 1, 1923, issue of the Journal of Electricity, I advised the adoption of a uniform accounting system by the electrical contractors and dealers in the Pacific states as an important factor towards the solution of their troubles. I now intend going a few steps further and in this series of articles I shall outline in some detail a simplified accounting system that I have devised and installed for numerous electrical contractors and dealers. This is to be done with the hope that I shall be successful in bringing about the adoption of some practical system so vitally necessary in this industry.

An accounting system correctly installed and operated should furnish the following important groups of information: sales, material and labor costs, and overhead expenses; so that, firstly, the amount of gross profit on sales may be ascertained by deducting the amount of material and labor costs from the amount of sales and, finally, the amount of net profit from operations by deducting the amount of overhead expenses from the amount of gross profit on sales. From these groupings the exact percentages of overhead expenses to material and labor costs can be obtained, so that it can be known positively how much should be added to estimated material and labor costs to cover the overhead fully and leave a fair margin of net profit on the work. This knowledge of the amount that should be added to material and labor costs, to cover overhead expenses, is the most essential thing in the operation of the business.

The following chart of general ledger accounts affords the necessary detailed classification to furnish the above information at the end of each closing period:

CHART OF ACCOUNTS

Assets

General Ledger A/c No.	Current	General Ledger A/c No.	Fixed
1	Bank Account	20	Automobiles
2	Petty Cash Fund	20A	Provision for Depreciation
3	Accounts Receivable		
3A	Provision for Doubtful Accounts	21	Furniture and Fixtures
		21A	Provision for Depreciation
4	Notes Receivable		
10	Merchandise	22	Tools and Equipment
11	Labor in Process	22A	Provision for Depreciation

Liabilities

30	Accounts Payable	31	Notes Payable

Net Worth

40	Capital Account	41	Personal Account

Revenue

50	Sales	52	Cost of Goods Sold
51	Returns and Allowances		

General Ledger Account No.	Expenses
60	Advertising
61	Automobile Expense
62	Depreciation
63	Doubtful Accounts
64	Freight, Drayage and Express
65	Heat, Light and Power
66	Insurance
67	Interest and Discount
68	Miscellaneous Expense
69	Rent
70	Salaries
71	Stationery, Printing and Office Supplies
72	Taxes and License
73	Telephone and Telegraph

The main books of account required in the operation of this system are the combined cash book-journal, general ledger, and accounts receivable and accounts payable ledgers.

The combined cash book-journal, the most important cog in the entire machinery, is a nineteen-column divided loose-leaf form conveniently arranged with three amount columns to the left of the page used for the bank transactions and headed from left to right as follows: Balance, Deposits Dr., and Checks Drawn Cr. Reading from left to right across the page there follow the date column, description space, and check number column. These are followed by sixteen amount columns which are given the proper headings to facilitate the postings into the general ledger accounts and for the normal size business are as follows: Accounts Receivable—Dr. and Cr., Accounts Payable—Dr. and Cr., Sales—Jobs and Store Cr., Merchandise Dr., Labor Dr., Automobile Expense Dr., Freight, Drayage and Express Dr., Interest and Discount—Dr. and Cr., Salaries Dr., Personal Account Dr., and Sundries—Dr. and Cr.

The use of this book is similar in effect to that of the old-style day book inasmuch as each transaction of the business is recorded one after the other as they occur, but in accordance with the double entry method of bookkeeping now in general use, the amounts of these transactions are entered in the proper columns, an equal debit and credit for each. For example, when a sale is made to a customer on a charge account, the date of the transaction should be entered in the date column, the customer's name and address in the description space, the amount of the sale in the accounts receivable debit column and the same amount in the sales credit column, either jobs or store. When an invoice is received for merchandise purchased, the date under which the entry is being made is entered in the date column, the name of the firm from whom the invoice is received and the date of same in the description space, the amount of the invoice in the accounts payable credit column and the same amount

in the merchandise debit column. When cash or check is received from a customer in payment of account, the date received is entered in the date column, the name and address of the customer in the description space, the amount received in the accounts receivable credit column and the same amount in the bank deposits debit column.

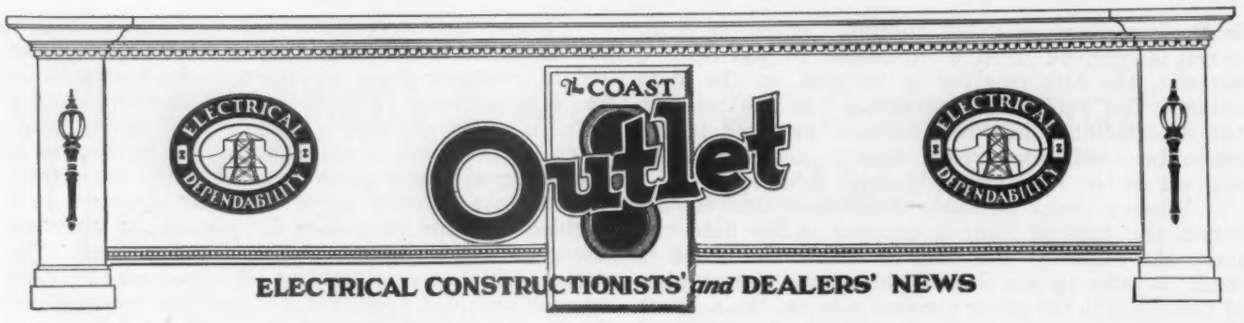
When a check is issued in settlement of an account, the date of issue is entered in the date column, the name of the firm to whom the check is made payable in the description space, the number of the check in the check number column, the amount of the check in the accounts payable debit column and the same amount in the bank checks drawn credit column. If a cash discount has been deducted in settlement, the total amount of the account paid should be entered in accounts payable debit column and the amount of cash discount deducted should be entered in the interest and discount credit column. This same rule applies if a customer in paying an account deducts cash discount; the total amount of the account paid should be entered in the accounts receivable credit column and the amount of cash discount deducted entered in the interest and discount debit column.

The totals of each column of this book are carried forward from page to page until the end of each month at which time the book is closed and posted. A continual proof of the work is obtained at the end of each page by adding the totals of the debit columns and adding the totals of the credit columns, the totals of which should agree. In case there is a difference between the two totals, it is very easily located as the correctness of entries on only the one page have to be verified. With this book in balance at the end of the month, the general ledger trial balance is practically assured as there is very little possibility of a mistake occurring in the few postings into the general ledger from this book. If there should be a difference, the small number of postings to be checked makes it very easy to locate.

The balance column in the bank department is not totaled as this column contains the daily balances in the bank and has no connection with the balancing of the cash book-journal. The amount of the balance in the bank is brought forward in this column on the first of each month from the preceding month and the amount of the balance in the bank at the end of each day is ascertained as follows: the total of the first day's receipts in the deposits debit column is added to the balance in the bank at the beginning of the day and from this amount the total of the checks drawn for that day shown in the checks drawn credit column, is deducted. Small pencil totals are made in the two columns at the end of each day and the difference between the previous day's total and the final total is the amount of the daily deposit and checks drawn, respectively. This amount of the daily deposit is added to the previous balance in the bank as shown in the balance column and the amount of the daily checks drawn is deducted, the difference being entered as the balance in the bank at the end of the day. This operation is repeated each day and the daily balance in the bank thus ascertained can be verified as to correctness by adding the total of the deposits debit column to date to the balance in the bank on the first of the month and deducting the total of the checks drawn credit column to date, the amount obtained being the same.

Under this system all cash and check receipts are deposited in the bank daily and all cash disbursements are made from a petty cash fund established for that purpose. This permanent working fund is established by drawing a check for an amount sufficient for the needs of the business and is charged to the general ledger account called petty cash fund. This account should never be affected unless it is decided at some later date to increase or decrease the permanent amount of the working fund. The petty cash drawer should at all times contain cash or cash and paid vouchers to equal this amount. As the fund becomes depleted it should be reimbursed with the amount expended by drawing a check to petty cash for the total of paid vouchers in the drawer and cashing it at the bank, charging the proper accounts for which the expenditures have been made according to the paid vouchers which are replaced.

The totals of all columns, with the exception of the sundries debit and credit columns, are posted monthly to the general ledger accounts as follows: deposits debit column to the debit of bank account No. 1, checks drawn credit column to the credit of bank account No. 1, accounts receivable debit column to the debit of accounts receivable controlling account No. 3, accounts receivable credit column to the credit of accounts receivable controlling account No. 3, accounts payable debit column to the debit of accounts payable controlling account No. 30, accounts payable credit column to the credit of accounts payable controlling account No. 30, sales—jobs and store credit columns to the credit of sales account No. 50, merchandise debit column to the debit of merchandise account No. 10, labor debit column to the debit of labor in process account No. 11, automobile expense debit column to the debit of automobile expense account No. 61, freight drayage and express debit column to the debit of freight, drayage and express account No. 64, interest and discount debit column to the debit of interest and discount account No. 67, interest and discount credit column to the credit of interest and discount account No. 67, salaries debit column to the debit of salaries account No. 70, and personal debit column to the debit of personal account No. 41. Amounts entered in the sundries debit and credit columns affecting accounts for which no special columns have been provided are posted in detail to the proper accounts in the general ledger. The amounts appearing in the accounts receivable debit and credit columns are posted in detail to the debit and credit respectively, of the individual customer's accounts in the accounts receivable ledger and at the end of each month the total of the balances of these individual customers' accounts should agree with the debit balance of the accounts receivable controlling account No. 3, in the general ledger. The amounts appearing in the accounts payable debit and credit columns are posted in detail to the debit and credit respectively, of the individual creditor's accounts in the payable ledger and at the end of each month the total of the balances of these individual creditors' accounts should agree with the credit balance of the accounts payable controlling account No. 30 in the general ledger. This constitutes a concrete proof of the accounts receivable and accounts payable postings and is one of the most essential features of the entire accounting system.



Why I Belong to the Electrical Contractors' and Dealers' Association

By C. T. SMALLCOMB

Second Vice-President, Electrical Contractors' and Dealers' Association, Los Angeles, Calif.

The number of contractor-dealer organizations is increasing rapidly. The scope of their operations is widening and their effect is becoming more evident. With few exceptions these organizations have worked constructively and have done much to improve the condition of the merchant and his position before the public. Those members who have supported the organization movement and who have sincerely worked for the association have generally benefited in direct proportion to the effort they have put forth. Some members have been content merely to hold membership and, in some cases, have not even attended the meetings. This is a good deal like having a home and not participating in its family life. No man can hope to get out of his home life any more than he contributes to it and it is so with his business associations. They will make returns to him that far exceed his expectations if he will only show a little human interest and participation.

To all of us who are in the electrical contracting business, there should be that feeling of giving everybody you come in contact with, a square deal. To your jobber you owe a correct account of your assets and liabilities, and to those who extend you thirty, sixty or an unlimited number of days' credit, you should outline your business policies, your way of keeping books, your way of arriving at the selling price of an installation or piece of apparatus. All these should be taken up with your jobber in order that he may help you in carrying out a successful business program. It must be remembered that, as a general thing, the jobber is old in the business. He can point out or refer back to many electrical contracting derelicts that have gone on the rocks or are well on their way and in most cases he, the jobber, is holding the sack. Therefore, it stands the contractor in good stead to confide in the wise old jobber that he may profit by his experiences. If for no other reason than that of being honest with your jobber and yourself, you should cooperate with him.

Next in line is your competitor. Business without competition does not exist. To be fair with your competitor is essential to successful business. To slander and belittle him is to tear down your own prospects. It lowers the standard of your business, and cheapens your character. This, in turn, makes everyone suspect you as well as your competitor. To tell a customer that you are there to sell your kind of material, your style of installation and your kind of service, is being fair with your competitor. The field is no place to unload your feelings regarding certain kinds of competition. There is a place for that.

Next in line is the electrical inspection department. What is it that makes so many electrical contractors down on the inspector? My answer is, "lack of cooperation." I do not know one electrical contractor in this city who has trouble with inspections if he tries to do the right thing by this department. It is only the contractor who tries to deceive, tries to get away with some raw deal on a job, that is always harranguing with the inspection department. There is the exception of the contractor who does not know the requirements except in a misinterpreted manner. It is through the Electrical Contractors' and Dealers' Association that the contractor is able to meet with the heads of the inspection department at their weekly meetings at the association headquarters. What a very splendid opportunity this meeting gives each and every one of us—that of discussing old and new laws and getting the right interpretation when necessary. What more can one ask?

Now for the customer. As a general rule his education is sadly neglected when it comes to electrical installations and so he is apt to be guided by the lowest price, unless he has the idea of quality in mind or has been "price stung" before by some ninety-day contractor. To be fair with the customer you cannot use methods to defraud him. I mean by that, to figure and scheme to see how low you can quote him and trust to luck that there will be some other way to slip up on the job in order to make your profit. To be fair with the customer and to yourself, it is self-evident that a good quality of material installed in a workmanlike manner at a price consistent with that kind of installation is necessary. I certainly believe that to be fair with a customer and to have him satisfied, it is necessary to have satisfied help who reflect optimism on their jobs. That means fair wages. In reference to the price of a job, the contractor's overhead should be arrived at intelligently and added to the cost of labor and material and then a fair margin added for profit.

A good installation, a satisfied customer and a profit to the contractor means everything and until the electrical contractor establishes that reputation he is going to have hard sledding, slim pickings and more than likely will end up in bankruptcy proceedings.

Now, how are we going to bring about a condition of fairness to ourselves with the jobber, competitor and customer? There is but one answer, "cooperation," and cooperation means association and the Electrical Contractors' and Dealers' Association is fulfilling association functions.

Let us all work out a plan that will carry out the idea signified on our emblem, "Quality, Service and Responsibility," then each and every one of us contractor-dealers can put our hearts and souls into developing that plan.

Large Attendance at Stockton Meeting of Association

The regular quarterly meeting of the California State Association of Electrical Contractors and Dealers was held at the Hotel Stockton, Stockton, Calif., March 15. More than 200 members were present from practically all Sacramento and San Joaquin valley towns and from the San Francisco Bay district. Those members who came from the Bay district took the steamer "J. D. Peters," of the California Navigation & Improvement Company's line, at six o'clock on March 14. Special arrangements had been made by Walter F. Price, executive secretary of the association, and the steamship line provided every means for the comfort and convenience of the travelers.

The executive committee met at ten-thirty on the morning of the fifteenth and in the afternoon an open session was held. Several papers were presented, all being of unusual merit and interest. J. H. Lavenson, of Alexander & Lavenson Electrical Supply Company, San Francisco, Calif., gave a talk on "Credits" and discussed many of the various phases of this part of a dealer's business. George E. Kimball, of the Industrial Accident Commission, presented a paper on "Live Wires and Live Wiremen," in which he presented some facts that are of application and interest to every contractor, dealer and central station employee. F. V. Mitchell, public accountant, gave a tabular view of the contracting business, based on the study of a large number of operations covering the period of a year. He pointed out the necessity for more accurate accounting, leading to better knowledge of job costs and consequent elimination of price cutting on estimates.

Employee Relations Discussed at Sacramento Dealers' Dinner

The regular monthly meeting of the Sacramento Valley Electrical Society was held at the Hotel Land, Sacramento, Calif., on Wednesday, March 11, at 6:30 p.m. "Hal" Willis of the San Francisco-Sacramento Railroad presided.

Jessie Cane, student of the Sacramento high school, spoke on the organization of an Engineers' Club at the local high school which plans to foster the study of engineering by more students and afford those interested a means of association with others following like pursuits. The Sacramento Valley Electrical Society extended a standing invitation to any of the members of the High School Club to attend any of its meetings.

The program of the evening was in charge of the Pacific Telephone & Telegraph Company of Sacramento. The principal speaker, Frank McNally, division commercial superintendent, spoke on "The Relation of Employer to Employee," covering this important subject in a very interesting way. He pointed out the necessity of human relations entering into all dealings of the employer with his employees. He spoke of methods used by the telephone company, namely, handling all problems through their employees' association, selling stock to employees under the market price, two weeks' vacation with pay, health benefits, insurance without cost, and unbiased promotions. Mr. McNally summarized the things that the employer and employees desire as follows: The employer wants (1) industrial peace, (2) improvement in the quality and quantity of work done, (3) reduction in the cost of production, not by lower wages nor by skimping the work, but by improved methods, (4) higher efficiency on the part of the employee, (5) attentiveness and interest of the worker in his work and in his fellows, and (6) loyalty and confidence on the part of the employee. On the other hand, the employee wants (1) higher wages, (2) better personal relations with his superiors, (3) good working conditions, (4) a square deal, (5) steady work, and (6) a chance to better his position.

A movie entitled "The History of the Telephone" was shown which traced the development from Bell's first instrument to the present time. This was followed by a reel entitled "Making Voice Highways" which showed the processes involved in the manufacture of the modern telephone cable.

General Electric Meetings Held to Introduce New Lines

The General Electric Company has been holding a series of special motor meetings to tell the trade the story of two new motor products they are putting on the market. One of these meetings was held in the lecture room of the Pacific Gas and Electric Company, Sacramento, Calif., Wednesday, Feb. 26, at 7:30 p.m. Nearly 150 members of the industry were in attendance. The meeting was presided over by W. J. Delehanty, resident representative of the General Electric Company in the Sacramento territory.

E. O. Shreve, manager of the General Electric Company, San Francisco, welcomed those in attendance and spoke of the humanitarian policies of the company.

Oscar Schlesinger, manager of the apparatus department of the Western Electric Company, San Francisco, Calif., gave a brief talk on motors. M. H. Rhine, manager of the marine and industrial department of the General Electric Company, San Francisco, spoke on the development of the mercury turbine and on electrically operated ships.

Frank E. Boyd, of the General Electric Company, San Francisco, spoke on the new types of motors just being placed on the market and gave a detailed description of their characteristics. C. T. Hutchinson, vice-president and general manager of the McGraw-Hill Company, San Francisco, was a guest of the evening.

Similar meetings were held at Chico Santa Rosa and Marysville.

San Diego Will Have Another All-Electric Home

Another electric home is being planned in San Diego, Calif., by the Electric Club of that city. So successful from an advertising standpoint was the last electric home there that a committee, headed by Alex Shreiber, is working out details at the present for a new home to be opened to the public this fall.

"We are going to profit by the experiences with the last electric home," declared Mr. Shreiber, who built, and made many of the arrangements for the previous home. Mr. Shreiber is a San Diego builder, believing in electric home-building, and a prominent member of the San Diego Electric Club. "While it is often hard to see any tangible results right at the very start, the results derived by the industry from the last home have shown themselves without question.

"We did not at once dispose of the last electric home but lived in it ourselves. Not long ago it was sold to a woman and at the time of purchase she declared that she did not want electric heating. She asked me to remove the electric radiators but being busy I did not have time to do it for a week or so. When I went back to take out the radiators she had been so completely satisfied with the heat from them that she gave me a check right away and kept the radiators.

"The homes that I have built since have all benefited from the last electric home. People ask for more outlets and the dealers report to me increased sales of electrical equipment, such as two-way sockets, etc., showing that many are trying to get the convenience of outlets from present installations. In the electric home I just spoke of the woman who bought the place was not satisfied with the number of outlets we had put in it. And we thought that we had put in plenty. Shortly after she bought it she had more outlets put in.

"Whitney and Company here, a bargain type department and 5, 10 and 25 cent store, used to have a small counter with a few electrical supplies. Mr. Whitney himself told me that after the electric home display he had had to enlarge the space allotted to electrical goods and had cleaned up a lot of stock from the increased demand he attributed to the home. So you see we are all helped by it."

Association Formed by Portland Contractors and Dealers

Organization steps have been completed for the formation of the Portland, Ore., Association of Electrical Contractors and Dealers in that city. Following a series of preliminary meetings permanent officers have been elected and a constitution and by-laws adopted. The organization has an initial membership of approximately fifty firms and individuals, the following officers having been elected for 1924: W. E. Morgan, Morgan & Galloway, president; F. C. Peterson, Main Electric Company, secretary, and Stanley Lutz, Stanley Lutz Company, treasurer.

Association activities in Portland have been at a standstill for nearly two years and the organization of the present body marks the first concerted action for cooperation among this group since the dissolution of the Oregon State Association in the spring of 1922.

The scope of the present association is very broad. The objects for which it has been organized as set forth in the constitution follow:

To promote the welfare of its members.

To distribute among its members the fullest information obtainable in regard to all matters affecting the electrical contracting and retail electrical merchandising business.

To collect data relating to the business of electrical contracting and retail merchandising.

To aid in bringing about more friendly relations between electrical contractors and electrical retail dealers, and others engaged in the electrical industry.

To elevate the standards of electrical installations.

The organization plans call for the formation of five bureaus, to one or more of which each member is assigned upon election to membership. These bureaus are divided into the following classifications: Retail, Fixture, Motor, Knob and Tube Wiring, and Conduit Wiring. Chairmen of the various bureaus are elected by the members and automatically form, together with the president, the executive committee of the association.

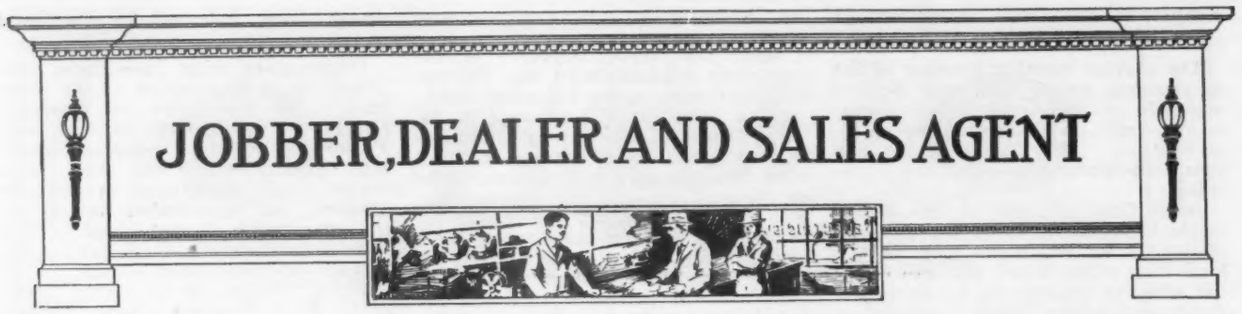
As a special duty, these chairmen act as a board of arbitration to settle any business difficulties between members of the association or any jurisdictional differences between the bureaus.

Members of the organization are defined as persons, firms or corporations engaged in the business of electrical contracting and repairing, including the installation of electrical apparatus and supplies, or engaged in the retailing of electrical supplies or in both contracting and retailing. Qualifications for membership are very broad. As set down in the constitution they are:

"For the purpose of determining whether an individual firm or corporation is engaged in the business as an electrical contractor or dealer, the following definition shall be used: An electrical contractor or dealer shall be any individual, firm or corporation carrying a general stock of electrical supplies for retail sale, or who may be prepared to make electrical installations."

Dues in the association are nominal, all members paying the same, namely, $12 per year.

Meetings are held every Monday night in the Portland Builders' Exchange.



There's Money for You in the Other Man's Contest

Window Display Contests Offer Opportunities to Sell Better Lighting Installations to Retail Merchants

Window display contests when conducted among dealers in the electrical industry have done much to increase the sales of electrical devices. The value accruing to the electrical industry from similar contests among non-electrical merchants has for some time been disregarded. The electrical dealer has felt that the only person benefiting from the special display has been the merchant that is responsible for it.

That there are opportunities for the electrical contractor, dealer and power company to capitalize on the window display contest being conducted by any class of merchants, cannot be denied. The purpose of each merchant entering the contest is to display his goods to the best advantage and to secure the best results from the exhibit proper illumination must be used.

This desire to present an attractive display to the public offers to the electrical industry an excellent opportunity to engage in constructive illumination sales work. The display itself may not warrant the expense of installing a new lighting system in the show windows, but the illumination salesman can, through educational sales work, show the merchant that the value of the modern window lighting installation will not pass with the particular display that is to be featured in the contest. The actual incentive to do the work at the particular time is present and the merchant will be in a more receptive frame of mind at that time than at any other.

The value of the window contest, as far as the electrical industry is concerned, is not confined entirely to the actual number of jobs that are sold prior to the display. The fact that the show windows that attracted the most attention at night were well illuminated will be found to be one of the best talking points that the illumination salesman can use. The period immediately after the contest also offers exceptional opportunities to sell better show window lighting.

As one step toward helping the retailers of Salt Lake City, Utah, capitalize the event of the Utah State Fair and Mormon Church conference, which were held in that city last fall, a window dressing contest was conducted by the Inter-mountain Retailer, the official organ of the Utah Retail Merchants' Association, in conjunction with the Rocky Mountain Electrical Cooperative League. Cash prizes aggregating $100 were awarded, the first prize being $50, the second $25, the third $15, and the fourth $10. Everyone in the city having frontage and using plate glass, was invited to participate, and a large number of merchants entered the contest.

The Rocky Mountain Electrical Cooperative League took considerable interest in the Salt Lake City window dressing contest and stood behind the Utah Retail Merchants' Association in sponsoring it. Merchants that cared to secure advice from the members of the league concerning lighting effects could do so at no cost to them. As a result, some of the windows were much better illuminated than they would have been otherwise.

The underlying idea in the contest was to urge every retailer to an appreciation of the value of alluring windows. Proper lighting was one of the main considerations in judging the relative merits of the various windows.

The judges were Prof. A. C. Carrington, retail store management expert from the University of Utah; H. W. Pickering of the Porte Publishing Company, and Earl J. Glade, editor of the Inter-Mountain Retailer.

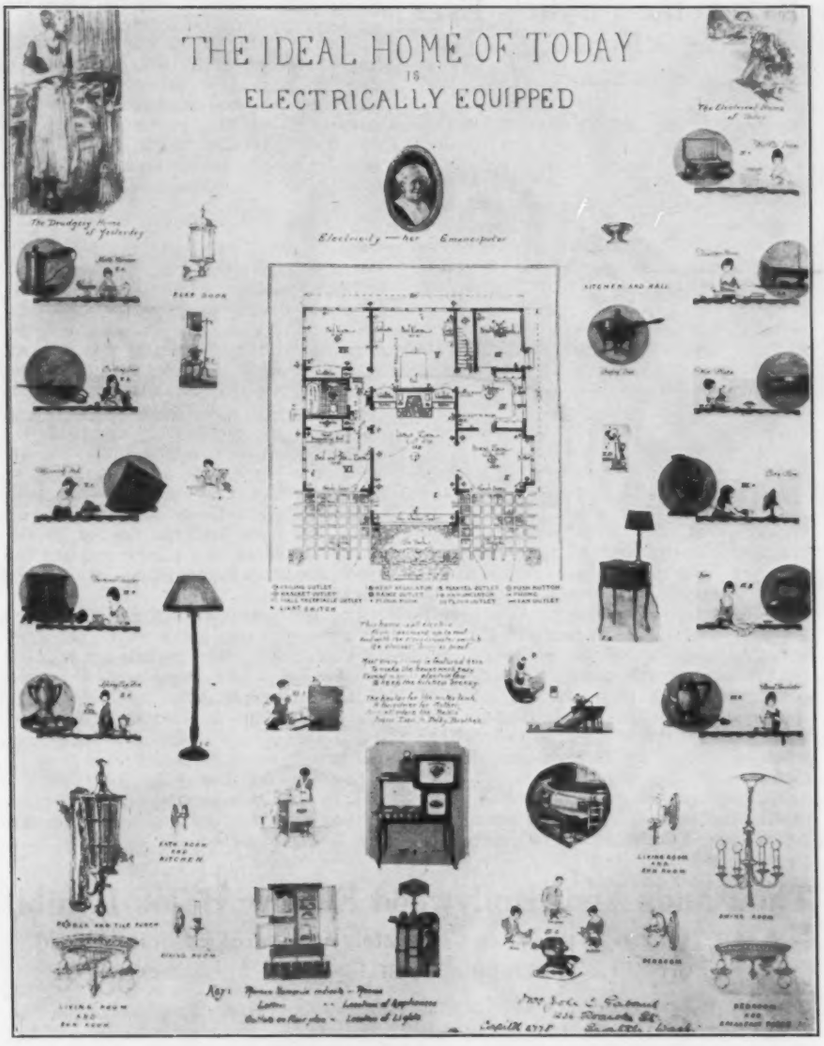
First prize was awarded to the Schramm-Johnson Drug Company for its window exploiting perfumes; Zion's Cooperative Mercantile Institution won the second prize for its window displaying ladies' furnishings; Kimball & Richards were given third prize, and the Walk-over Shoe Company fourth prize. In each of the prize-winning windows, as well as those of several of the other contestants, the lighting effects were very good. In many cases, according to the opinion of the judges, higher scores would have been made, had more attention been given to proper lighting.

The windows were judged principally upon the following points: the idea—its potency as an attention getter, interest arouser, and general selling stimulus; the mechanical technique, such as selection of material for display—the balance—the coloring effects—the general harmony—the lighting — the general structural arrangement—the unity of appeal.

In making their decisions the judges stated that lighting of stores and show windows is one of the most vital factors in dressing up the appearance of Salt Lake City's main thoroughfares, and that a great deal of attention should be given to this matter by the merchants.

The results of the window display contest were most satisfactory as far as the electrical dealers in Salt Lake City were concerned. Retail merchants of the city were shown that better illumination of not only their show windows but also their store rooms was a desirable thing.

The display of the Schramm-Johnson Drug Company was awarded first prize in the Salt Lake City contest.



First prize in the outlet contest was awarded to the woman that submitted the layout reproduced above.

Creating Interest in the Educational Exhibit

Electric Club of Seattle and Daily Paper Cooperate to Attract Attention to Need for Electrical Devices in Home

A most successful publicity "stunt," which attracted considerable attention to the electric home exhibit of the Electric Club of Seattle, Wash., was used in connection with that club's electric home and appliance show conducted in Seattle last fall. The "stunt" consisted of a contest among the women of the Northwest and was designed to create interest in the electric home exhibition and in the various electrical devices that should be in the home. The contest was presented by one of the leading newspapers.

The contest was centered around a floor plan of a six-room house. This floor plan was reproduced in the newspaper and the women that desired to enter the competition were instructed to indicate on the floor plan the places where they thought the various types of outlets should be placed and also where they would locate the necessary electrical appliances. Symbols for the various types of outlets were provided and the contestants were advised that they should use their own symbols for the appliances.

The first prize in connection with the contest was awarded to Mrs. John C. Gabourel of Seattle. Mrs. Gabourel presented a most complete plan by which she showed that she had given careful consideration to the location of the various types of outlets and in addition to this she recommended the use of a large number of electrical appliances. The required symbols were used to indicate the location of the outlets but Mrs. Gabourel made a decided departure from the commonplace in the way that she indicated the use of the electrical appliances. Illustrations, cut from magazine advertisements, were used to show what she deemed necessary for the modern home. Each of these illustrations was captioned by a key number that indicated where the device was used in the home. Similar key numbers appeared on the floor plan and indicated the exact location of each electrical appliance.

An Executive Secretary Publishes a Peeve Re Putting Out the Prunes

By JOE OSIER

"Bill Shakespeare, the celebrated hand-to-hand word balancer, must have had me in mind when he released for publication that smart crack:—

"'No sighs but of my breathing; no tears but of my shedding'"—

Blubbered Bertha Bigenough, the underslept and underpaid executive secretary of a certain local association, as she noisily snapped her chewing gum and ran a set of freckled fingers through a second class marcel.

"And, you can tell the pink-eyed world for me that any Bird-member of this organization—who flits into this cage and puts out birdseed for dues, is not doing me a favor.

"And, honest to Freddie, I'm sick of having them act like they are. 'Tain't my association. If it was, I would attend the meetings and pay my dues.

"Laugh that off.

"I'm just putting in my time here—trying to snare a little scenery to cover my ol' carcass and my main job is sending out notices of meetings and trying

"If your dues are due, do pay!"

to collect dues that have been due since the original rally of the charter members—and—

"Listen! My job is a big take.

"I'm Frank and Ernest—both—when I admit that some of these, now, association members give me the heebie jeebies, anyway. When they do attend the luncheons or the meetings—which is seldom—they act like they are painted on the furniture or else they pop off like a Red at a radical reunion—spieling much and saying nothing—but—

"That ain't my chiefest squawk. I don't really care whether they make the meetings or not, but I would like to have 'em come in with their clams for membership fees without me giving them a canvass talk as long and as wet as 'Toastie's Good Buy.'

"Have you paid your last dues? And if not—why not?"

Keeping the Firm Name Before the Public's Eyes

Continuous Series of Advertisements Found to Be Best Means of Attracting Attention of Customers to Stores

Robert Bruce discovered that it was the continuous effort of the spider that finally placed that animal where it could continue its self-assigned task of weaving its web. This same principle, that repeated efforts in the same direction will in the end produce results, has been found to be the basis of much of the advertising matter of the present day. The advertiser is rightly of the opinion that to get his idea and his product before the public, he must constantly "hammer the thought home" through whatever advertising channels he uses.

Hit-and-miss advertisements, whereas they may be of some value in attracting occasional purchasers to the merchant's place of business, are not true examples of the art of advertising. The occasional purchaser is not the customer that the advertiser is seeking to draw to his store. The customer that will be a constant patron of the merchant's establishment whenever he is in the market for the material that the merchant

An example of the type of advertisement being used by the British Columbia Electric Railway Company.

carries, is the one that the advertiser is anxious to reach by means of the advertisements.

The aim of the advertiser is two-fold. He wants to secure new customers and he wants to keep his name and products before the minds of old customers. To the first class he desires to make the initial sale and in so doing make old customers that will instinctively turn to his store to secure similar merchandise in the future. Whether the new customers will return depends largely upon the service that they get on their first visit to the store and also upon the aggressiveness of the merchant's advertising. Old customers can be brought to the store by remembrances of good service and quality merchandise secured there before and by advertisements telling of articles that they are wanting.

To bring both the new customer and the old one to the store, the merchant cannot rely upon spasmodic advertising. A full-page spread twice a year will not have the effect upon sales that a smaller space used at closer intervals will have. Advertising specialists agree that it is the continuous and consistent advertiser that shows the greatest volume of sales at the end of the year. Though the character of the advertising may be changed any number of times, the advertiser that uses space regularly at short intervals will benefit more than the spasmodic advertiser. The regular presentation of the name of the concern, in addition to the value of each particular advertisement, will serve to place the firm's name in the mind of the reader with the result that he will immediately think of the advertiser when in need of the latter's line of merchandise.

The department store is probably one of the best examples of the consistent newspaper advertiser. The merchandising establishment generally sees that an advertisement of some character is published each day in the leading dailies of the cities in which it operates. The space that is taken is varied according to the merchandise that is being advertised on the particular day, but the fact that the name of the store should be presented each day is not lost sight of by the advertising manager.

The British Columbia Electric Railway Company, Vancouver, B. C., believes in continuous and not spasmodic advertising, as is evidenced by a series of good-will advertisements which has been running in British Columbia papers for the last six months and will be run indefinitely, according to James Lightbody, publicity manager of the company.

The advertisements are small in size, being only two columns by 5 in., and are run in six dailies and nine weeklies, one advertisement being run each week. In a number of these papers, the company had been advertising for several years but when the series was started, the space was standardized at the size mentioned.

The advertisements are set up at a job printing plant and electros are made for each paper, thus insuring a uniform appearance, conforming with the style of all the company's advertisements. The cost of this is comparatively small and is well repaid in the added attention the advertisements receive.

The tone of the copy has been to feature the company's desire to give service and the various employees are now being depicted.

Thousands Visit Hollywood Electric Home Exhibit

Mediterranean Type Home Completely Electrically Equipped and Furnished Throughout Open for Over Four Weeks

The interest of thousands was aroused during the showing of the Hollywood electric home in Los Angeles, Calif., from Feb. 28 to March 30, when the home was open to public inspection daily from 2 to 10 p.m., under the auspices of the California Electrical Cooperative Campaign.

The Hollywood electric home has a superb setting, nestled in the hills of Hollywood, just under the cross made famous by the Pilgrimage Play, and was designed by J. S. Powell, architect of the staff of Reed & Company, designers and builders, who constructed the building with the cooperation of the California Electrical Cooperative Campaign. The home was furnished and decorated by Barker Brothers, furniture dealers of Los Angeles. The home is of the Mediterranean type and is constructed of white stucco, with two stories and roof garden.

The approach to the home is by way of a winding double stairway, at the head of which one enters a round entrance hall which is flanked by the living room on one side and the dining and breakfast rooms on the other, while the smoking room is just beyond the living room. Just in the rear of the dining room is the kitchen, while to the left is an enclosed rear porch.

Upstairs are three spacious bedrooms, each with individual bath and dressing room, while the entire top floor of the home is converted into an open-air room, with tasteful awnings, wicker furniture, a fountain filled with goldfish and an open air fireplace, which permits the turning of this place into a sleeping porch if desired.

Each of the rooms in the home was completely outfitted with electrical appliances and devices. The kitchen has a built-in electrical refrigerator, built-in dish washer and numerous other electrical features. The Hollywood home is heated electrically and equipped with electric water heater and electric range.

Throughout the home are numerous convenience outlets, which were indicated with a hand pointing to each, so as to attract the attention of the public. The photographs reproduced on page 255 give an idea of the completeness of the electrification of the home.

During the time the home was open, a considerable amount of advertising and publicity was given to it through the press as well as through the mailing of special prepared folders and by the display of automobile windshield stickers, arrow cards and banners on street cars.

The Hollywood electric home told aptly and well the story it aimed to get before the public, namely, that it is upon the care and completeness of the electrical wiring of the home and the number and accessibility of the convenience outlets in every room that the entire measure of household comfort depends.

THOUSANDS of people living in and around Los Angeles visited the Hollywood electric home to find that electricity solves many of the problems of making the home modern. The illustrations on this page show what was done in hall, dining room, bedroom, dressing room and kitchen to make the home completely electrical. Convenience outlets were located at every point where the home-owner could possibly want them and during the time that the home was open to visitors small signs called attention to the outlets.

INDUSTRIAL NEWS

Suggests Black or Mojave Canyon Dam to Control Colorado

In a statement issued by R. H. Ballard, vice-president and general manager of the Southern California Edison Company, supplementing his testimony before the irrigation committee of the House of Representatives, Mr. Ballard declared that flood control is the primary requirement on the Colorado River. He contended that this could be accomplished in two or three years under a co-ordinated general plan under which the sale of power would pay the costs. He also stated that the expense of the proposed Boulder Canyon Dam—officially estimated at $55,000,000 for the dam and $49,000,000 for generating and transmitting 600,000 hp. of electrical energy—is far too great and would pile up a deficit of $52,000,000 in the first fifteen years, and that this plan would besides leave the Imperial, Coachella, Palo Verde and Yuma Valleys in continued danger during the eight or ten years it would take to build the dam.

In his statement Mr. Ballard says:

"Investigation of the water records on the Colorado River show that, with storage capacity for flood purposes of 5,000,000 acre-ft., the maximum flow at flood times can be reduced to less than one-quarter of what it would be without such storage. The small remainder can easily be handled by the flood-control works now installed in the Imperial Valley District. A dam slightly more than 300 ft. high would provide this amount of storage at either Glen Canyon, in the Upper Basin, or near Boulder Canyon, in the Lower Basin, and a dam at Topock, in Mojave Canyon, a little over 100 ft. in height would provide this storage and control the floods at much less cost.

"Complete development of water for irrigation purposes would not be needed at the start. Fifteen years, at least, must elapse before the development of all lands requiring irrigation water in the Lower Basin could take place. The total expenditure for providing irrigation water should not be made so far in advance of the development of the lands, because this would entail a terrific waste due to idle capital.

"Electric power development may be augmented beyond that strictly incident to the construction needed for flood control, for the purpose of increasing the revenue, but an initial development beyond 300,000 hp. will result in annual deficits by reason of the lack of an adequate power market to absorb more than this amount of energy.

"An interesting suggestion has been made, that a dam 310 ft. high, near Black Canyon, in the same general vicinity as Boulder Canyon, would sufficiently control the floods with a storage of 4,000,000 acre-ft. of water. At this site 300,000 hp. of electrical energy could be developed at an estimated cost of $104.30 per horsepower, including the cost of the dam, but without the cost of transmission lines which would raise the figure to about $145 per horsepower. This low cost compares favorably with the latest development of my own company and is very much less than the $273 per horsepower cost under the high dam plan for the amount of power the market would absorb without incurring annual deficits.

"At the Diamond Creek site 268,000 hp. could be developed at a cost of $112 per horsepower, without transmission, and the necessary storage for flood control might be provided at Topock, in Mojave Canyon, for about one-tenth the appropriation asked for in the pending bill. This reservoir would provide secondary power to supplement the output of power plants located higher up on the river. When additional reservoirs are built above Mojave Canyon, this Mojave Canyon reservoir could deliver continuous power while acting as a re-regulating reservoir.

"The greatest benefit to the country will be attained by the development of the whole river, under a comprehensive, co-ordinated plan without waste or conflict. If the government will move along the flood-control question, the people in our own territory and the investors throughout the country are ready to finance the power development through the purchase of taxable securities of our own and other public partnership power companies. The United States would supervise, and the state commissions would regulate, our activities. Over 3,000,000 hp. could be developed on the Colorado River from Lee's Ferry to the Gulf of California without touching the Grand Canyon National Park. About $1,000,000 a year would be the taxes payable to the states, and an equal amount to the United States, by power companies and their security holders as a result of the first 300,000-hp. development. Complete development would increase these tax payments to about $18,000,000 annually."

The Lighting Service Bureau, of Salt Lake City, Utah, which was organized about a year ago, is now operating as a definite department of the Rocky Mountain Electrical Cooperative League. The work of the bureau has increased very rapidly since its organization, and some remarkable results have been accomplished. The change is made in order to provide better working facilities and to make still broader the scope of its field of usefulness.

Diamond Drill Work Completed on Deschutes River Site

The Columbia Valley Power Company has completed diamond drill borings at one of the two sites for dams and power houses to be built on the Deschutes River, according to F. R. Schank, consulting engineer of the company. These borings provide the first accurate information as to formations below the surface. As a result of these borings state geologists are now making a complete survey of the formations in that immediate district. The company will cooperate with the state in completing the investigation.

The Columbia Valley Power Company has taken over from the Oregon Trunk road twelve miles of right-of-way recently abandoned between Metolius and the Pelton dam site. The project will include a dam and power house at the junction of the Deschutes and Crooked Rivers and another unit at Pelton, eight miles north of the first site. The two sites, it is estimated, will yield a constant total capacity of 175,000 hp.

The project has been fully financed and active construction work is to be undertaken in the near future, according to Mr. Schank. It is reported that additional sites being investigated will be capable of supplying at least that much more power. Other known power possibilities within the range of the development being made by the company will bring the total potential power of this portion of the Deschutes River and its tributaries to more than 500,000 hp.

The two sites to be developed have the unique advantage, as compared with most hydroelectric projects, of having transportation facilities already provided immediately contiguous, as at the Pelton site, or within a few miles over a first class highway, as at the Metolius site.

The Board of Supervisors of San Francisco, Calif., has approved the appointment of John J. Dailey, assistant city attorney, as special counsel for the city in connection with the valuation of the properties of the Pacific Gas and Electric Company and the Great Western Power Company. The appointment carries with it an increase in salary from $350 to $850 a month.

The United States Bureau of Reclamation has advised the Federal Power Commission that it has no further objection to the issuance of a preliminary permit to the Idaho Power Company for its proposed development at Twin Falls, Idaho. In view of this report, it is expected that the Commission will grant the application at its next meeting.

Secretary Work Presents Report on Swing-Johnson Bill

That the generation of electric power by the government is a precarious financial practice, is the opinion of Secretary of the Interior Work as presented in a report on the Swing-Johnson bill sent to the chairmen of the Senate and House committees on irrigation and reclamation of arid lands. Secretary Work at the same time recommended that action as to what should be done in connection with the Colorado River should be governed by what would be best 50 or 100 years hence. The Secretary urged that Congress in its final decision upon a plan of development for the river consider all the separate features in the light of the report, including flood control, impounding water for farming, storing water for generating electric power, the projected all-American canal and the possible future necessity for domestic water to supply California cities.

Secretary Work expressed doubt as to the wisdom of the government's consenting to the erection by either private or governmental bodies of any storage dam in the Colorado until the Colorado River Compact has been signed by Arizona. The total cost of the Boulder Canyon Dam, the power plant, transmission lines and the all-American canal should be set at $200,000,000, according to the report. This sum includes a margin of safety to protect the government. It is estimated that a dam to raise the water surface 605 ft. and to create a reservoir 120 miles long and 157 acres in area, would cost $50,000,000. The cost of the all-American canal is set at $31,000,000.

In regard to the government generation of electric power Secretary Work said:

"The generation of electric power by the government under any conditions is precarious financial practice. The manufacture of it primarily for sale on the open market, in competition, invites subsidies and is without congressional sanction at this time. The government, instead, may exercise its authority to fix rates to consumers for their protection."

Secretary Work's report was accompanied by findings and conclusions of the select board recently appointed and composed of engineers from the Reclamation Service, the War Department, the Geological Survey and the Federal Power Commission. Detailed technical observations on the problems of the Colorado River question were also submitted with the report.

Municipal Light Plant Is to Be Built by Loveland, Colo.

The city council of Loveland, Colo., has signed a contract authorizing the construction of a municipal lighting plant to be in operation by Oct. 18, 1924. The contract was awarded to the Hendrie & Bolthoff Manufacturing & Supply Company of Denver. The company, in its bid, agreed to purchase the entire bond issue of the city voted by the council for the new plant and amounting to $425,000.

The contract price for completion of the hydro plant and a new distributing system amounted to $371,587.14. The construction company has agreed to pay the city the difference in cash and to allow a further payment of $83,000 to the city with which the city may purchase the distributing system of the present privately owned company, provided the system is condemned.

The city of Loveland first began the erection of a municipal plant in 1917 and work was stopped by a temporary injunction secured by the Denver Gas & Electric Light Company, predecessors of the Public Service Company of Colorado, operating in the northern Colorado field. Later the State Supreme Court ruled there was nothing to prevent a municipality from erecting its own lighting plant.

Then the Franklin Trust Company of New York, representing a bondholders' protective committee, secured a further restraining order and recently the Public Service Company filed a protest with the state public utilities commission, asserting that the contemplated expenditure by the city was insufficient to erect a plant suitable to the needs of the city and setting forth that adequate service is now being given Loveland by that company.

When the city council met March 18 to open bids on the project, a legal representative of the Public Service Company was present and entered a formal protest against the city's proceeding with the work and also warned the bidders of pending litigation.

The city council has advised the Public Service Company, according to newspaper reports, that it will pay $83,000 for the present distribution system provided that offer is accepted within thirty days, otherwise the city will proceed to construct its own distribution system as provided in the contract which has been signed with Hendrie & Bolthoff.

On account of the legal aspect of the case and its possible effect on financing the project, it is said that only two bids were submitted, the high one being that of a private contractor. A situation similar to that in Loveland occurred 12 years ago in the neighboring town of Longmont, Colo., where the light plant is operated by the municipality.

In submitting its bid to the Loveland council, the Hendrie & Bolthoff Company was represented by James H. Pershing, a prominent Denver attorney, and C. E. Drennen of its sales staff.

Seattle Company Is to Conduct Range Sales Campaign

Plans have been perfected by the Puget Sound Power & Light Company for an extensive range campaign over a 40-day period starting April 1, 1924. The campaign will be staged in conjunction with the Edison Electric Appliance Company. Hotpoint-Hughes ranges will be featured.

Every district of the company will be covered. Demonstrators and speakers furnished by the manufacturer will be placed in district offices where demonstrations will be given for a certain number of days, the period depending upon the size of district. A large number of salesmen will be used. Advertising will be carried in local papers and special sales letters and literature will be employed.

The Puget Sound Power & Light Company added a total of approximately 1,400 ranges to its lines during 1923. This year an effort will be made to sell approximately 2,500 ranges.

Engineering Foundation to Make Tests on Small Arch Dam

Plans for the construction of a small arch dam that can be used for testing purposes have been made by the committee on arch dam investigation appointed by Engineering Foundation. A site has been selected and a portion of the sum necessary to finance the investigation has been subscribed. It is planned to start construction as soon as the balance of the money can be secured. Subscriptions totaling about $30,000 have been raised and it is hoped that a total of $100,000 can be raised for the investigation. An invitation to contribute is being extended to all that are interested in securing more information that would make for reduction in the cost of such structures so far as is consistent with safety.

The site selected for the test dam is on Stevenson Creek, a tributary of the San Joaquin River about 60 miles east of Fresno, Calif. The committee has reported that the site is satisfactory for the following reasons: foundation conditions are excellent; the site is accessible and is located on government ground; water will be available at will for testing purposes; and the reservoir capacity will be so small that in case the structure should fail, life or property would not be jeopardized.

It is planned to build a simple single-center arch dam with a constant up-stream radius and a vertical up-stream face. The dam is to be built of thin sections and will be carried, at the first, to a height of 60 ft. Repeated tests under various loads and temperature conditions will be conducted at that height. The reservoir may be kept dry for several months so that temperature changes in dry concrete can be measured.

After all studies and analyses have been made, the structure is to be raised successively in 10-ft. steps with tests at each stage until failure occurs or until the dam reaches the maximum height economical at the site. This height would be 100 ft. or more.

The design of the dam, the tests and compilation of all data will be in the hands of the committee on arch dam investigation of Engineering Foundation. W. A. Brackenridge, senior vice-president, Southern California Edison Company, has been selected by the committee to have charge of receiving and disbursing funds.

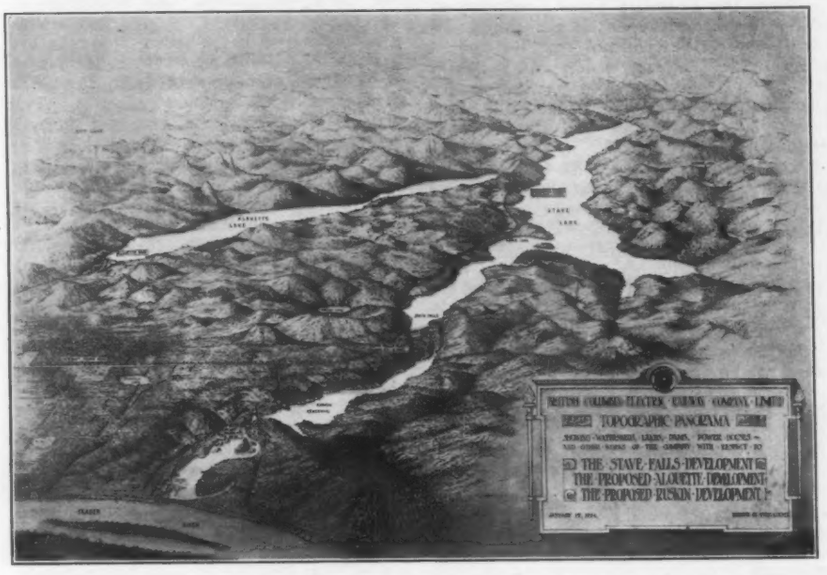
Development of the Boulder Canyon Dam project should be by private interests instead of by the government, Major-General George W. Goethals told the irrigation committee of the House of Representatives recently. Private development under the Federal Water Power Act, he stated, would safeguard the government and also insure capital when needed. General Goethals recommended that a rock-fill dam be used instead of a concrete one.

According to reports from Idaho, the water supply in that state is below normal. Light snows in the higher altitudes, lack of rain, and a shortage in the stored water supply will necessitate conservative use of water in order to avoid a serious shortage. One measure of economy suggested is a reduction in the acreage of corn planted.

Construction on Alouette-Stave Project to Be Started

The second portion of the Alouette-Stave development of the British Columbia Electric Railway Company is about to be started. The work will consist of driving a tunnel from Alouette Lake to Stave Lake a distance of 4,000 ft., and the damming up of the lower end of Alouette Lake and thus raising the level of the lake a maximum of 45 ft. At the mouth of the tunnel a power house which will develop 11,500 hp. will be built, using the difference in level of the two lakes. This water will be used again in the present Stave Falls plant. This plant is being enlarged by rewinding the present generators and adding an additional unit, bringing the capacity of the plant up from 52,000 hp. to 70,000 hp.

The third part of the scheme is a 96,000-hp. plant at Ruskin, three and a half miles down the Stave River. This will be started before 1926. The whole scheme will cost approximately $10,000,000. Work on the Alouette project is expected to be under way immediately and be finished by the winter of 1925.



Bird's-eye view of the Alouette-Stave development of the British Columbia Electric Railway Company, Vancouver, B. C.

Rain and Snow Increase Water Supply of California

California's rainfall total, which is subnormal for the season, received a welcome addition during the third week in March when rain fell both in the northern and southern parts of the state. In the first storm Los Angeles received .45 of an inch, which was about an average for the county. Orange County varied from .30 of an inch at one point to 1.20 inches at another. Wide variations, ranging from one-fifth of an inch at San Diego to 2.24 inches at Lake Cuyumaca, were also recorded in San Diego County. At Calexico in the Imperial Valley, where it had not rained this year, .05 of an inch of rain fell, but it was reported that the rain was not general throughout the valley. Bishop, Inyo County, reported a snowfall of 25 in., and other mountain districts reported that fairly heavy snow had fallen.

Snow was reported as having fallen heavily on both the eastern and western slopes of the Sierra. Snow in the higher regions is said to have greatly increased the seasonal run-off from the Hetch Hetchy and Don Pedro watersheds and is expected to increase the water supply available for ranchers in Stanislaus County. The usual amount of water for irrigation purposes was expected at Modesto as a result of the snow and rain. A light snowfall in Oakdale added to the supply of irrigation water for that district. Foothill streams in all parts of the state are reported as far below the usual high water line for this season of the year, but heavy snowfalls were reported in the Sierra above Sonora and at Quincy, Plumas County, and a light fall on the Marysville Buttes. Rain at the end of the week added another .45 of an inch to Los Angeles' total. At the same time rain fell liberally in the upper Sacramento Valley and lightly at Sacramento, Stockton, Fresno, San Jose and San Francisco. Eureka received .84 of an inch and San Bernardino reported .60 of an inch and a mountain snowfall of one to three feet.

To Start Construction Work on Sultan River Plant Soon

Construction work on the Sultan River power plant of the Puget Sound Power & Light Company will start in the immediate future, according to an announcement following the issuing of a permit for water appropriation to the company by Marvin Chase, Washington state supervisor of hydraulics. The development will cost about $600,000 and the power will be used to supply towns in Snohomish County.

The plant will develop approximately 4,000 hp. of electric energy, using the water at 100-ft. head. The water will be diverted from Sultan River to the flumes by a diversion dam 15 ft. high and 200 ft. long.

Diversion of Trinity River Is Recommended by Board

The Trinity River in California should be diverted into the Sacramento Valley, in the opinion of the California Power Board. This board was created at the instance of the Federal Power Commission. Its membership is made up of D. C. Henny, Reclamation Service; Major U. S. Grant, 3rd., Corps of Engineers; E. W. Kramer, Forest Service, and W. F. McClure, state engineer of California.

The report finds that the point of diversion should be just below the mouth of Stuart's Fork. The reasons against the diversion, the report says, are outweighed by the advantages for it. It is pointed out, however, that the present demand for power and for irrigation is not sufficient to justify the diversion at this time.

The immediate diversion of the stream is proposed in an application for preliminary permit which has been submitted to the Federal Power Commission by W. H. Samson, of Corning, Calif. In view of the report, it is probable that the Samson application will be denied and that both the state and the federal government will adopt a policy of granting no rights on the Trinity, or on the Klamath below the mouth of the Trinity, which would block the future diversion of the Trinity into the Sacramento Valley.

Consideration Given to New Type Fishways for High Dams

Apparently, means have been found whereby one of the serious problems facing the construction of a dam on the Columbia River at Priest Rapids can be overcome. The proposed dam would cut off salmon from extensive spawning ground. The license for the project will require the construction of a fishway. The Bureau of Fisheries heretofore has taken the position that fish will not cross a dam over 30 ft. in height, regardless of what may be provided to facilitate their passage. That Bureau, however, is about to revise its opinion, it is understood, as a result of experiments in California where large numbers of fish have crossed dams of greater height. This has been made possible by providing a series of resting pools.

H. J. Pierce, the president of the Washington Irrigation & Development Company, which is an applicant for a license covering the Priest Rapids project, visited officials in Washington recently with photographs showing salmon going through such a fishway.

It is believed that this improved method of constructing fishways is of great significance to the power industry on the Pacific Coast and in Alaska. There are many important rivers on which power dams are being strenuously opposed by those interested in the fish industry. These streams include the Klamath, the Sacramento and its upper tributaries, the Columbia and numerous smaller streams.

The annual report of the Industrial Accident Commission of California for the year 1922-1923 is now off the press and ready for distribution. It contains a resumé of the work accomplished by each division of the Commission during the year. Copies will be sent upon request to the Commission.

New Electrical Code Put in Effect in Portland

Requires Installation of Convenience Outlets and Specifies Standards for Electrical Devices Offered for Sale

New and far-reaching requirements are included in the electrical code that has just been adopted in Portland, Ore., and that became effective March 1, 1924. Included among the important provisions are sections requiring the installation of convenience outlets in living rooms, dining rooms, parlors and kitchens of new homes. Another section requires that all electrical appliances, devices and supplies sold in the city be approved by an existing national organization charged with such work. A third provision sets a standard size for all fixture outlets in concealed work and limits the manner of installation of such outlets.

The new code prescribes that all contractors and dealers be licensed. A board of examiners is set up and examinations are conducted at regular intervals. The fees for securing a license follow:

	Fee for 1st Year	Fee for Renewal
General electrical contractor	$50.00	$25.00
Maintenance	5.00	5.00
Electrical dealer	5.00	5.00
Supervising electrician	1.00	1.00

The maintenance fee is required for establishments that service appliances or devices. An additional fee of $10 is charged candidates who appear before the board for examination as supervising electricians.

The code sets up a board of appeal before which complaints may be taken for hearing. Board members are appointed by the mayor.

The plan requiring the approval of all appliances, supplies and devices sold or installed in the city is not new. It was tried in Chicago and failed because the code in that city set up a local board from which the necessary approval was to have been secured. In the Portland code "approved" is defined as applying to "materials and appliances which conform to the standards of the Underwriters' Laboratories, or to the specifications and requirements of the United States Bureau of Standards or other similar organization of recognized standing, properly equipped and qualified for experimental testing and service-value determinations through field inspections."

The section of the code governing such appliances follows:

Sec. 702—Materials and Appliances

a. All materials and appliances used in the installations which are covered in this Code shall be approved. (See definition of "approved" Section 601.) It is not the intent of this rule to require that motors, meters, and other devices which are not included in the list of inspected appliances issued by the Underwriters' Laboratories, shall be approved as defined by Section 601; but it is the intent to require that wiring, materials and devices, such as those included in the list of inspected appliances issued by the Underwriters' Laboratories shall be approved.

b. No materials or appliances which do not conform to the provision of paragraph (a) of this section shall be sold or offered for sale, either in person or by agent, clerk or employee. (See also Section 301 (a), paragraph 4.)

In the case of this particular provision, a definite period was allowed for dealers to dispose of material which did not conform to requirements. After that all stock was checked and a warning was issued that dealers failing to comply with this section would be subject to a heavy fine. To date it has resulted in the manufacturers of several devices applying for approval from one of the organizations set down in the code. It has also done much toward eliminating cheap and unsafe material and appliances from the market. The license fees for dealers are sufficient to employ an inspector to make a check of stocks of all stores handling electrical products.

The section requiring the installation of convenience outlets in certain rooms of new dwellings follows:

Sec. 1803—Wattage Requirements for Residences and Apartments

b. Approved receptacles for attachment plugs, connected directly to the circuit wires by not smaller than No. 14 wire shall be provided in parlors, living rooms, dining rooms and kitchens. A light outlet shall be so placed as to illuminate the front of every furnace or heating boiler. These requirements apply to all buildings which are to be wired for electric light. (It is the purpose of the above rule to prevent as far as possible unlawful and dangerous extensions of flexible cord in order to obtain outlets that are nearly always needed.)

It is believed that the above section will have a far-reaching effect. Some disapproval of its requirements was expressed by contractors when the code was issued but since that time the necessity and value of the provision has been demonstrated to them.

Provisions governing the size of fixture outlets have been recommended by the fixture manufacturers for some time. The provisions in the new code conform to these recommendations. They follow:

Sec. 1102—Installation of Outlet Fittings

b. At fixture outlets in concealed work, boxes and plates shall be installed in the manner prescribed in paragraphs 1 to 3, inclusive, below:

1. At ceiling outlets a 4-in. box at least 1½ in. deep, with drilled and tapped ears, shall be used. At side wall outlets, boxes shall conform to these dimensions and, in addition, shall be provided with plaster covers, having drilled and tapped ears, which will reduce the opening through the plaster to not more than 2 in. horizontally, nor more than 3 in. vertically.

2. For fished work in finished buildings, and also for new work where the construction of the building will not permit 1½-in. deep boxes to be used, outlet plates provided with drilled and tapped ears shall be used.

3. Boxes and plates shall have fixture studs attached, except where receptacles only are to be installed in closets, kitchen center, bath centers, front and rear porch centers, and in garages, basements and similar locations (when not rooms). (All outlets over 5 ft. from the floor shall be classed as fixture outlets.)

The Portland code conforms with the National Electrical Code except that in many cases its provisions are more detailed. Especially is this true in the sections relating to the grounding of circuits. Another section where this is noticeable prescribes the wattage of circuits. An important provision in this section follows:

Sec. 1805—Wattage Permissible on Branch Circuits

a-3. For portable heating appliances only, in cases where a special circuit of No. 10 wire or larger carried direct into 20-amp. polarized receptacles, an aggregate load of not more than 2,500 watts at 125 volts, or 5,000 watts at 250 volts, will be permitted. Not more than four receptacles and no equipment other than the attachment plug receptacles shall be installed on such circuits; provided, however, that switches and pilot or signal lights may be installed with the individual receptacles if desired. (This rule shall not be construed as authorizing or permitting the installation or use of any individual device consuming more than 10 amp. or 1,250 watts [or in the case of 250-volt circuits, 2,500 watts], on the same branch circuit with any additional load. Each such individual device consuming over 1,250 watts at 125 volts or 2,500 watts at 250 volts shall be on a separate circuit protected by a separate cutout.)

The new code is largely the work of L. W. Going, head of the electrical division of the bureau of buildings, Portland Department of Public Works. Copies may be secured from that office at 50 cents each, except in the case of electrical contractors and dealers in Portland, who are furnished with two copies free of charge.

Will Repeat Use of June Bride Week Window Material

The designing of the window displays that will be entered in the June Bride Week exhibit contest, June 2-7, will be left entirely to the individual dealers this year, according to the June Bride Week committee of the California Electrical Cooperative Campaign. In past years it has been the practice to suggest a plan that could be followed in decorating the windows.

The card reproduced above will be used again this year to advertise June Bride Week.

The same window trim material will be supplied to dealers this year as was used last year, the purpose being to get the public to realize that June Bride Week is an annual affair. Slogans and the cards that carry the picture of the June bride will present the same message to the public, the only difference being that dates will be changed to read "California Electrical Appliance Week, June 2-7, 1924." The five slogan banners will present the following statements: "Gifts that endure," "Combine beauty and comfort," "For her future happiness," "For her convenience," and "For modern homes."

The decision that the committee would suggest no plan for decorating the dealers' windows was reached after it was agreed that window displays that expressed the individuality of the dealers were of more value than those that all followed one plan. In this connection it was pointed out that each dealer faced a different problem and consequently would desire to use a different type of display to attract customers to his store during June Bride Week.

Gorge Plant on Seattle's Skagit Project Nears Completion

The present status and the cost of the work of the Gorge Creek plant of the Skagit project, Seattle's municipal hydroelectric venture, was recently reviewed by C. F. Uhden, chief engineer of the project, in a statement from which the following has been extracted.

Delay in completing the tunnel contract has postponed the date on which the Gorge Creek plant can be put in service; this date is now set at June 1. Owing to the possibility of high water in the Skagit River, it may be that the timber crib diversion dam, which has been partially built, cannot be finished by that time. However, this will not prevent operation of the plant, for at high water the inlet to the tunnel is submerged, and during the low water season a rock and gravel fill can be thrown across the river to divert its flow into the tunnel. The transmission line was to be completed March 15 and the north substation in Seattle by May 1.

Based on average flow of the Skagit River, the minimum production of the Gorge plant with crib dam will be 23,400 hp., and the maximum 59,000 hp. Mr. Uhden points out that practically all the power from the Gorge Creek plant as now being completed has been sold, and suggests that it is time to start construction of the 240-ft. masonry dam and to install an additional generating unit. With the Gorge Dam built and three generating units installed, the rated capacity of the plant would be 112,500 hp.

The total cost of Gorge Creek plant, including first generating unit, railroad, transmission line, right-of-way and north substation will come within the $11,000,000 bond issue. No funds are available for additional substations or for construction of any distribution system, but a large part of the Gorge current can be handled by the present distribution system. The estimated cost per hp. of the first installation is $183, based on the cost of the plant, transmission line, right-of-way, railroad from Rockport to Gorge, and north substation in Seattle.

Extensive Developments Planned by Pueblo Companies

The Southern Colorado Power Company and the Colorado Fuel & Iron Company of Pueblo, Colo., have recently announced improvement programs that will call for the expenditure of several million dollars. The former company will spend over $400,000, according to W. F. Raber, general manager.

Improvements totaling $3,000,000 have been approved by the directors of the steel mills and most of this outlay will be for electrical material or boiler house equipment for increased generating facilities. Engineers have been working over two years on these plans and the electrical industry of the mountain region has been anxiously awaiting their completion.

Principal improvements contemplated include the following: electrical precipitators for cleaning blast furnace gas, thereby enhancing the value of these gases as fuel; a new power plant, including a battery of high pressure boilers and stokers with superheaters; turbo-blowers for the blast furnaces, in place of the reciprocating engines now used for that purpose; additional generating facilities with turbo-generators; and the substitution of electrical drives in the rolling mills replacing the steam engines now employed.

Greater efficiency and increased output is expected as a result of these improvements which have been made necessary as the result of increasing orders for steel. One order already received from the Santa Fe railroad provides for the delivery during 1924 of rails valued at $5,000,000.

Contracts for the new improvements and equipment will be let this spring, although there are still a number of engineering details to be worked out, according to company officials.

The Southern Colorado Power Company will spend one-quarter of its appropriation for repairs and improvements of distributing facilities. The line between Pueblo and Stone City will be reconstructed, also the lines in the Cripple Creek region, due to the increasing number of old mines that are being electrified. Changes will also be made in the system at La Junta, Rocky Ford, and Sugar City.

Improvements at the Canon City steam plant are already under way. New boilers will be installed increasing the generating capacity about 25 per cent.

Transformer capacity at the Pueblo steam generating station will be increased by 4,000 hp. in order to increase the exchange of power between the principal plants. Expense in making these improvements at Pueblo does not include any changes necessitated by the establishment of the Pueblo flood conservancy district.

New display windows are to be installed by the Western Public Service Company in its office at Laramie, Wyo. Plans are now being made by M. H. Soule, manager of the Laramie office, for a lighting installation that will be without a peer in southern Wyoming.

The City of Eugene, Ore., has recently applied to the office of Rhea Luper, state engineer, for a permit to appropriate 2,500 sec.-ft. and 5,000 sec.-ft. of water from the McKenzie River. The water is to be used for power developments at two locations.

Tariff Supplement Is Filed by Grays Harbor Company

Tariff supplement has been filed by Grays Harbor Railway & Light Company, Aberdeen, Wash., with the state department of public works in Olympia, Wash., effecting a reduction for the smaller consumers. The new schedule is applicable to Aberdeen, Hoquiam and Cosmopolis for single phase a.c. residential and commercial lighting service and small power installations of less than 5 hp.

The rate schedule provides a 9-cent rate per kw-hr. for the first 20 kw-hr.; 8 cents for the next 80; 7 cents for the next 100; 5 cents for the next 100 and 4½ cents for all over 400 kw-hr. The old rate was 10 cents on the first 40 kw-hr.; 9 cents on the next 30; 7 cents on the next 100; 6 cents on the next 100; 5 cents the next 100 and 4½ cents on all over 400. The new filing will be effective April 1.

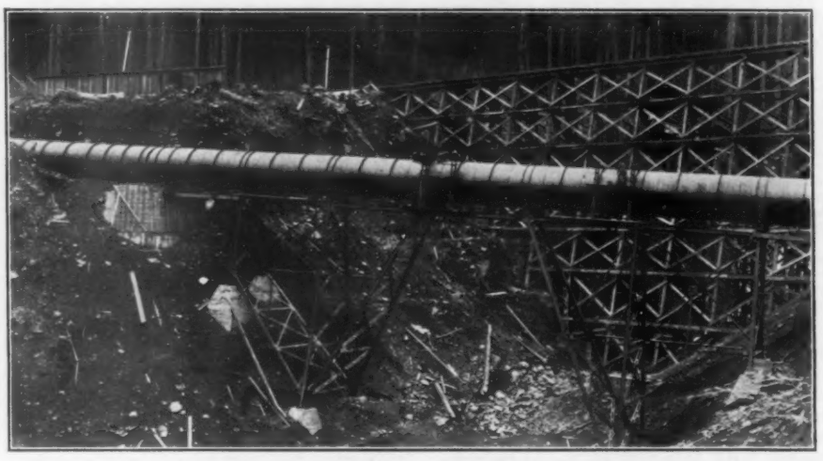
Progress Reported on Oak Grove Plant Construction

Rapid strides are being made in the construction of the first unit of the Oak Grove plant of the Portland Railway, Light & Power Company on the Clackamas River in Oregon. Present plans call for the completion of the 25,000-kw. unit July 1, 1924.

A summary of the progress report of March 15 showed all steel to be on the ground with the exception of the manifolds. The pipeline will be completed April 1 and concreting of Tunnels Nos. 1 and 2 will start on that date. The diversion dam and the intake structure with the exception of the intake gates have been completed. The penstock is 50 per cent complete.

Forms have been removed from the power house and practically all concrete work finished. The Pelton water wheel is being set and parts of the generator began arriving March 15. The crane has been installed. Both Pelton and General Electric Company engineers are on the ground to supervise the installation of equipment furnished by those companies.

The transmission line has been completed for some time and at present is being used for the purpose of supplying energy for construction work.



Portion of Canyon Creek pipeline recently installed to carry water to the Oak Grove Power House of the Portland Railway, Light & Power Company.

Electric Smelter Proposed for Colorado School of Mines

With the recent announcement that a demonstration unit of the first electric smelter in Colorado would shortly be installed by private parties, the metal mining industry in that state has suggested the advisability of placing such a unit in the experimental plant of the Colorado School of Mines. Robert H. Sayre, one of the trustees of the institution and a well known figure in the mining industry of the mountain region, has already suggested such a plan of action to Governor William E. Sweet, according to recent newspaper dispatches.

The experimental plant which was recently reopened after a shut-down since the war, is now under the direction of A. J. Weinig and S. Power Warren, metallurgists of national reputation who have had considerable experience in electro-smelting experimentation. John Joyce, state commissioner of mines, has added his recommendation to the plan.

Stewart Electric Manufacturing Buys Safety Electric

The Stewart Electrical Manufacturing Company, San Francisco, Calif., has purchased the stock and business of the Safety Electric Company, that city, and will in the future be located at the latter's plant, 59 Columbia Square, San Francisco. The company will continue to manufacture switches, switchboards and other similar lines. J. T. Stewart and E. W. Lange are the proprietors of the Stewart Electrical Manufacturing Company and they have retained in their employ L. J. Van Atta and the sales and engineering forces of the Safety company.

Seattle Will Try Experiment to Prevent Electrolysis

Supt. George F. Russell of the Seattle Water Department has requested an appropriation of $2,582.62, one-half each from the Water and Municipal Railway Departments, to install a negative feeder from the James Street substation to the new steel pipe line from Cedar Lake, to prevent damage to the line from electrolysis. The experiment is planned to prevent disintegration of the steel from stray current from the municipal railway lines. Superintendent Russell points out that if successful, the negative feeder would return the stray power to the railway and reduce its power loss.

H. V. Gates of Terrebonne, Ore., has applied to the office of Rhea Luper, Oregon state engineer, for permission to appropriate water from Crooked River, in Jefferson County. Mr. Gates proposes to develop approximately 7,950 hp. of electrical energy for commercial uses in that county.

The Commissioner of Light and Water of Tacoma, Wash., has announced that bids will be received until April 16, for equipment for the Lake Cushman power project of that city. The most important items included in the call for bids are: two 27,500-hp. vertical turbines, for an operating head of from 140 to 250 ft., together with auxiliary equipment; two 20,000-kva. vertical type generators, with auxiliaries; seven 6,667-kva., four 14,100-kva. and ten small transformers; and one 15,000-kva. synchronous condenser, with auxiliaries.

Approximately 175 acres of land along the Pit River have been transferred by the Pacific Gas and Electric Company of San Francisco to the State of California. The land adjoins the Burney Falls State Park in Shasta County and will give that park a frontage on the lake that will be formed upon the completion of the 125-ft. dam being built to impound the waters of the Pit River for the Pit No. 3 power plant.

Proposals to change the name of the Portland (Ore.) Railway, Light & Power Company, to Portland Electric Power Company, were presented at the annual meeting of the board of directors of the company on March 26. No definite action was taken at the meeting. The reason for considering the change in name is given that at the time of the company's organization in 1907 its street railway business comprised the principal activities. The condition is now reversed, the light and power business having taken the lead. A stockholders' meeting will be held April 4, at which time the change in name may be reconsidered.

Books and Bulletins

McGRAW-HILL BOOKS

McGraw-Hill Book Co., Inc., Penn Terminal Bldg., New York City. Distributed free on application.

Perhaps it may seem somewhat of a task to write a review of a catalog, for that is what McGraw-Hill Books is. Nevertheless this is more than a mere catalog in the ordinary acceptance of the term. It is a book about books, many books, useful books, and, if intelligently used will probably be the book most referred to of any in the library of the engineer, technician, or librarian.

The sum total of human knowledge is becoming so great, and writers so many and prolific, that it is a gigantic task to know where to look when the need for specific information on any subject is manifest. Here, then, is a catalog of the publications put out by one of the world's great technical publishing houses, so, in this respect at least, that problem is automatically solved.

There is first the index, or rather the indices. There are three, a classified table of contents, an author's index and a subject index, three ways by which the searcher may locate what he wants. The detail is also carefully worked out. Books are classified under general captions which are more specific than usual. In the description of each book is given a condensed summary plus a statement of chapter captions. This will be most useful in facilitating the selection of the right book to suit the purpose. The general captions themselves are arranged alphabetically, thus constituting actually a fourth index, which in turn is cross-indexed. Nearly two thousand volumes are included.

It is a big job to work out a catalog of this nature, and the publishers have done a useful and excellent work that will be appreciated by everybody that is anybody in engineering and industrial pursuits.

THE SELLING PROCESS

By NORVAL A. HAWKINS, formerly general sales manager, Ford Motor Company, Detroit, Mich. 314 pages. $3.00. Norval A. Hawkins, Detroit, Mich.

CERTAIN SUCCESS

By NORVAL A. HAWKINS. 382 pages. $3.50. Norval A. Hawkins, Detroit, Mich.

These are companion books and should be found together in the library of every business man, whether he be directly connected with sales or engaged in executive or administrative work. The first book is in its sixth edition and thirty-fourth thousand. The second book, written some time after its predecessor, is already in its third edition. These books constitute an unusual and analytical review of the handling of sales and sales work. The author has considered in detail the various steps in a sale and has presented his analysis in clear-cut fashion and in phrases so simple they must be understood by all. No salesman can read these books without absorbing involuntarily so much of personal benefit that his work will unconsciously be improved. The reward for his reading should be written in more intelligent effort and increased sales volume.

Sales managers should read these books in order to present more clearly to their men the fundamentals of good selling and the importance of the personal equation in sales work. Executives will find much of real value in each volume and will be able better to analyze their employees and to place them to the best advantage to their general organizations.

The author has presented his material in unusually readable form and has introduced none of the trite expressions of ordinary sales texts. His experience and his keen knowledge of sales development, as well as of the development of the individual, stand out sharply in every chapter. He has produced books that should become standard texts in every course in salesmanship and that should be in the possession of every salesman, no matter what his ability or his experience. The material is presented with a punch in every sentence—no one but a dullard can fail to get his story. The simple English, the straightforward method of presentation and the style of treatment of the subject make these books unusually interesting reading.

The "Electrician" Electrical Trades Directory and Handbook for 1924, Benn Bros., Ltd., London, Eng., has just been issued. This is the yearly edition of what is more familiarly known as the "Blue Book" and is replete with useful information. In addition to valuable technical data the book contains a roster of names prominent in the electrical industry in England and the British colonies and also contains much useful miscellaneous information. A particularly popular section of the book is the classified directory of manufacturers which directory is unusually complete in its scope. The price of this book is 25 shillings, net.

Meetings

Electric Club of San Diego to Hold Picnic in May

Finding that the holding of one meeting each month at which ladies are guests of honor, is a successful practice in many respects, a picnic is being arranged for the open meeting of the Electric Club of San Diego, Calif., to be held in May. Bruno Barth has been appointed to head the picnic committee, on which are also W. W. Gibson, Fred Goss, Chris Goldkamp and G. W. McLeod.

The last social meeting of the San Diego club, March 11, was under the auspices of the Better Street Railway Cooperation committee, of which Fay Smalley was chairman. The street railway company was host to the electric men and their wives for a special car ride over one of the new lines of the San Diego Electric Railway Company.

After the car ride a banquet was held in the San Diego Hotel. Short talks were made by Claus Spreckels, vice-president and general manager of the street railway, M. J. Perrin, assistant to the general manager, L. J. Burns, assistant general manager, city councilmen and guests.

Under the auspices of the Public Education committee, the March 18 meeting was featured by an address by W. A. Hamman, instructor of public speaking at the San Diego high school.

Physicist Addresses Meeting of Portland Engineers

A short description of some of the work now going on at the Schenectady plant of the General Electric Company was made at the March 12 meeting of the Portland sections of the American Institute of Electrical Engineers and the National Electric Light Association, by R. R. Robley, operating engineer of the Portland Railway, Light & Power Company, who has just spent six months in the central station engineering department there.

Prof. A. A. Knowlton, of the physics department of Reed College, made the principal address and spoke on the structure of the atom. He explained the various steps that led the physicist to his present conclusions and demonstrated several of his points with special apparatus. A film, "Beyond the Microscope," assisted in the presentation.

Public Relations Committee Report Is Completed

The public relations committee of the commercial section, Pacific Coast Electrical Association, met at the Jonathan Club in Los Angeles, Calif., on March 15. The meeting was presided over by the chairman, R. E. Smith, advertising agent of the Southern California Edison Company, Los Angeles, and was attended by Don C. Ray, manager, bureau of public relations, Pacific Gas and Electric Company, San Francisco; R. A. Balzari, manager, industrial department, Westinghouse Electric & Manufacturing Company, San Francisco; A. E. Holloway, superintendent, commercial department, San Diego Consolidated Gas & Electric Company, San Diego; George T. Bigelow, assistant general agent, Southern Sierras Power Company, Riverside; A. M. Frost, manager, commercial department, San Joaquin Light & Power Corporation, Fresno; and W. H. Fischer, manager, department of greater service, Southern California Edison Company, Los Angeles.

Among the various matters discussed was the final report of the committee for presentation at the convention of the association to be held at Coronado in June. The reports of the sub-committees, including that covering the "Smiles" campaign, were considered and incorporated into the general report.

COMING EVENTS

National Safety Council—Engineering Section—
San Francisco, Calif.
April 7-8, 1924

Engineers' Society of Pasadena—
Pasadena, Calif.
April 10, 1924

Wyoming Utility Association—
Annual Convention—Cheyenne, Wyo.
May 5-6, 1924

Rocky Mountain Division, National Electric Light Association—
Quarterly Meeting—Cheyenne, Wyo.
May 5-6, 1924

Rocky Mountain Committee on Public Information—
Quarterly Meeting—Cheyenne, Wyo.
May 5-6, 1924

National Electric Light Association—
Annual Meeting—Atlantic City, N. J.
May 19-23, 1924

The Electric Power Club—
Absecon, N. J.
May 26-29, 1924

American Association of Engineers—
San Francisco, Calif.
June 11-13, 1924

Pacific Coast Electrical Supply Jobbers' Association—
Quarterly Meeting—Coronado, Calif.
June 12-14, 1924

Pacific Coast Electrical Association—
Annual Meeting—Coronado, Calif.
June 16-20, 1924

To Display Third Electric Home in Salt Lake City

Plans are now under way for the third electric home in Salt Lake City. The electric home committee of the Rocky Mountain Electrical Cooperative League has the matter in hand. The home is to be built at the corner of Yale Avenue and 15th East Street, one of the most attractive of the city's residential sections.

E. H. Eardley, chairman, will have charge of the home management, more particularly the display arrangements. G. R. Randall will have charge of all of the League's portion of the mechanical and electrical work, as well as supervision and direction of the electrical installations. L. B. Johnson will direct the publicity. E. A. Evans, secretary of the committee, will have under his supervision the exhibits which are separate and apart from the home.

Educational Entertainment Will Be Presented in Denver

For the benefit of its members and their families, including employees, an entertainment has been arranged by the Electrical Cooperative League of Denver, Colo., for April 4 which promises, according to reports, to be a combination of education and good time. Two sets of moving pictures, the Westinghouse Lamp Company film "Show 'Em How" and the General Electric Company's latest film, "Wireless Wizardry," with special musical numbers will be presented.

A one-act musical revue with a chorus of sixteen telephone girls from the Denver exchange will be offered by the Mountain States Telephone & Telegraph Company through Dean Clark, commercial manager, and treasurer of the Denver league. An exhibition by the company's champion first aid team will also be featured.

The double quartet of the Public Service Company of Colorado is billed for several numbers. A number of other features are being arranged by the league's entertainment committee consisting of J. C. Davidson, chairman, C. E. Addie, R. W. Elliott, W. E. Barrett, E. A. Scott and E. E. Stettler.

League Asks Separation of Hetch Hetchy Issues at Polls

By resolution adopted at a meeting of its board of governors on March 18, the Civic League of Improvement Clubs and Associations of San Francisco, Calif., requested the Board of Supervisors to separate completely "the proposals for bonds for the Hetch Hetchy water system and for the municipal hydroelectric distributing system, respectively."

Two ordinances passed by the board authorized a bond issue for the continuance and completion of the work on the Hetch Hetchy water system as well as an issue for the construction and acquisition of a municipal hydroelectric power distributing system. The election is scheduled for Sept. 2, 1924, at which time, under the ordinances as passed, the two questions would be submitted to the voters as one issue. The Civic League took the stand that their presentation as separate and distinct issues would enable the people of San Francisco to express themselves definitely on each point.

The resolution also contained a request that the board provide for a stipulation "that the sums of money to be thus authorized for the completion of the Hetch Hetchy water system and for the hydroelectric power distribution system, respectively, be expended only for their respective purposes and none other, and that under no consideration shall such sums or any portion thereof be used for any purpose other than thus stipulated in such bond issues."

The California Development Association has requested business men of the state to subscribe $100,000 for the purpose of completing the survey of the water resources of California. The request announces that the $200,000 appropriated by the state has been exhausted and that if the additional $100,000 is secured the state engineer states that the survey can be completed and findings submitted to the legislature in January, 1925.

Manufacturer, Dealer and Jobber Activities

Curtis Lighting, Inc., is now located in its new quarters at 1119 West Jackson Boulevard, Chicago, Ill.

The National Lamp Works of the General Electric Company, Cleveland, Ohio, has announced that the prices on National Mazda lamps have been reduced in common with all other Mazda brands.

The McGill Manufacturing Company, Valparaiso, Ind., is now represented in New York by the McGill Manufacturing Company, 67 Park Place, New York City.

The E. H. Freeman Electric Company, Trenton, N. J., has just issued Catalog No. 8, showing the complete line of Circular F wiring devices. This catalog contains 64 pages and gives illustration and data on each article manufactured by the company.

The General Electric Company has recently put on the market an electrically operated flow meter which is designed to provide an accurate means of measuring the total flow of gas, oil, steam, etc., through pipes. Due to the electrical principle of operation, the indicating, curve-drawing and integrating instruments can be located any distance away from the pipe where the flow is being metered. Instruments can be either separated, grouped or arranged as requirements dictate.

The Johnson Electric Washing Machine Company, Berkeley, Calif., has opened a new store at 1696 Fillmore Street, San Francisco. I. H. McCarthy is the manager.

N. Steinberg, until recently service manager of the San Francisco, Calif., office of the Hoover Company, has opened a new store at 1344 Fillmore Street, that city, where he will do a general retail business in electric appliances.

The Peerless Light Company, Chicago, Ill., has just placed on the market two new styles of bungalow ceiling fixture. These are furnished in two, three and four lights in ivory finish and are popularly priced.

The Stuart Products Corporation has just put on the market a new B battery designed for the new style upright radio cabinets. The battery can be placed in the rear of the cabinet.

Crouse-Hinds Company, Syracuse, N. Y., has issued an attractive folder descriptive of condulets for switch and plug receptacle outlets. In addition to showing illustrations of the devices this folder also shows photographic reproduction of installations.

The Robbins & Myers Company, Springfield, Ohio, has issued a new catalog on types R and RA repulsion induction motors. The bulletin—No. 137—will be furnished on request to the factory.

The Benjamin Electric Manufacturing Company, Chicago, Ill., has issued Bulletin No. 52 which contains a great deal of useful information on lighting equipment, reflectors, fittings, etc., and in addition has considerable technical data presented in convenient form.

The Packard Electric Company, Warren, Ohio, has begun manufacturing in its new plant, just recently completed. This plant, it is said, will greatly increase the production facilities of the company.

The F. W. Wakefield Company, Vermillion, Ohio, has issued a new folder descriptive of "Red Spot" fixture hangers and containing a copy of the Wakefield specification for the guidance of buyers.

The Westinghouse Electric & Manufacturing Company has just published an eight-page circular—C 1694—descriptive of "Supervisory Control." The circular contains a discussion of the general principles of both audible and visual systems of supervisory control for automatic substations. The circular will be sent upon request to the factory.

The Medearis Electric is the new name for the firm formerly doing business under the style of Ell-Bee Appliance Company, at 810 American Avenue, Long Beach, Calif. No change in the personnel is recorded, B. O. Medearis and G. B. M. Medearis retaining ownership.

The Majestic Electric Appliance Company, Inc., San Francisco, Calif., has just issued a new catalog descriptive of its new line of heavy duty air heaters. This catalog is well illustrated in color and contains, in addition to the descriptive matter, installation diagrams and a chart showing the cost of operation per hour of various sizes of heaters at full, medium and low heat, based on current costing 2 cents, 1½ cents and 1 cent per kw-hr.

W. N. Mathews Corporation, St. Louis, Mo., has announced a reduction in the prices of OK and open type Mathews Fuswitches. The reduction is effective March 1.

The Moore Steam Turbine Corporation, Wellsville, N. Y., has brought out a new type of centrifugal pump. The pump is said to embody several novel construction features.

The Ohio Electric & Controller Company, Cleveland, Ohio, has brought out a new motor-generator for charging three-cell radio or automobile storage batteries.

The Illinois Wire & Cable Company, Sycamore, Ill., has purchased six acres of land in Oakland, Calif., where it has started the construction of a modern wire mill. This plant is expected to be in operation within ninety days and will be used to supply the company's customers in the West.

The H. G. Weeks Manufacturing Company, Hamilton, Ohio, has moved to new and larger quarters in that city.

The Packard Electric Company, Warren, Ohio, has issued Bulletin 202-A, which is devoted to the presentation of information regarding A-W regulators for control of series street lighting circuits. The bulletin also contains price lists on the equipment. It may be secured by addressing the manufacturer.

R. E. Grimes and **F. J. Reeves,** formerly of Stewart Electrical Manufacturing Company, San Francisco, Calif., have organized the Electric Sheet Metal Works, at 752 Bryant Street, San Francisco, where they will do a general sheet metal working business particularly for electrical purposes.

Landers, Frary & Clark, New Britain, Conn., have recently put on the market the Universal electric cooker. The cooker is provided with special kettles and a cover and will roast, bake and broil as well as care for surface cooking. The device is rated at 660 watts and is controlled by means of a three-heat switch. It is supplied with 24 pieces of aluminum ware.

Simplex Electric Heating Company, Cambridge, Mass., has brought out a new electric iron in which the Simplex nichrome, enclosed-coil heating element is used. One of the features of this iron is the new "Simplex Unbreakable All-Steel Plug." It is claimed that this plug cannot chip, crack, crumble or break. A Bakelite ball grip on the anti-kink spring provides a convenient means of connecting and disconnecting the iron. Another interesting feature claimed for the ball grip is that it, in combination with the spring which connects it to the plug, assures a quick break of the circuit when detaching the iron. This eliminates excessive arcing.

Travelers always attract attention, particularly when they have a new idea to present. Maybe that is the reason that B. J. Meyers, in charge of the Peerless Sales Palace of the Peerless Light Company, got these three men to pose for his camera at Monrovia, Calif. The southern California men are: (from left to right) Thomas Statler, salesman, San Francisco branch of Peerless Light Company; and Messrs. Winder and Jones of the electrical firm of the same name.

Personals

A. B. Day, who has been in the employ of the Los Angeles Gas & Electric Corporation for the past thirty years, was recently elected to the position of vice-president and general manager of that organization. Mr. Day, immediately after his graduation from Los Angeles High School, 30 years ago, joined the Los Angeles Gas & Electric Cor-

A. B. DAY

poration as a salesman in the gas stove department, later becoming bookkeeper of the consumers ledger, when there were less consumers on the books than there are new consumers every month at the present time. His next position was chief clerk of the gas office, acting as paymaster in addition to his other duties. He then became chief clerk of the electric office, then manager of the gas appliance department. His next promotion, which was about twelve years ago, was to the position of assistant to vice-president, then he was promoted to be auditor and, in turn, to the positions of assistant secretary, manager of operations, assistant general superintendent and general superintendent, acting in this last capacity for the past three years. From this position he was elected to the active head of the corporation which he has served in various capacities. Mr. Day succeeded William Baurhyte, who was elected president of the organization in place of W. B. Cline, who is now chairman of the board of directors. Mr. Day's place as general superintendent has not been filled up to the present time.

C. C. Hillis, president and general manager of the Electric Appliance Company, San Francisco, Calif., is on an extended trip to Eastern points. During his absence Mr. Hillis will visit, among other places, New Orleans, La., New York City, New Britain, Conn., and Providence, R. I.

G. M. Simonson, for the past several years chief electrical engineer of the State of California, has resigned to enter private employment. Mr. Simonson has been connected with the division of agriculture, department of public works, for about eleven years.

Frank M. Reeves, for the past four years power engineer of the Western Electric Company, Hawthorne, Ill., has joined the force of the Triumph Electric Company, Cincinnati, Ohio. He will represent the company at its Cincinnati office.

A. B. West, president of the Southern Sierras Power Company, Riverside, Calif., speaking before the House Irrigation Committee recently, recommended that Boulder Canyon dam be constructed immediately by private interests supervised by the Federal Water Power Commission. According to press dispatches, Mr. West stated that in this way the project could be developed to better advantage than if the government handled it, no demands would be made upon the United States Treasury, and the delays and excessive costs usually incident to the construction and operation of publicly owned works would be avoided.

James W. Perry, general manager of the electrical, automotive and public utilities departments of the Johns-Manville Company, New York City, has been elected a vice-president of that company. Mr. Perry is an active member of the American Institute of Electrical Engineers, the American Electric Railway Association and of the National Electric Light Association.

W. C. Mumaw has been appointed development director of the Grays Harbor Light & Power Company, Aberdeen, Wash. Mr. Mumaw, who was formerly manager of the Aberdeen telephone system, will locate new outlets for the power being developed on Grays Harbor, and seek new industries for Grays Harbor cities.

W. A. Brackenridge, senior vice-president of the Southern California Edison Company, Los Angeles, recently spent some time in Seattle conferring with executives of the Puget Sound Power & Light Company.

Norwood W. Brockett, chairman of the Northwest Electric Light and Power Association committee on public relations and tax agent for the Puget Sound Power & Light Company, Seattle, Wash., addressed the Seattle Gyro Club recently on the hydroelectric possibilities of the State of Washington, opposing the Erickson superpower bill. Oliver T. Erickson, author of the bill, will appear before the club shortly.

C. R. Eccles, of the Western States Gas & Electric Company, Stockton, Calif., has been placed in charge of the personnel department recently organized by that company.

R. H. Ballard, vice-president and general manager of the Southern California Edison Company, Los Angeles, Calif., is in Washington, D. C., conferring with government officials relative to the Swing-Johnson bill and to flood control on the Colorado River.

J. D. Ross, superintendent of the Seattle light department, was the principal speaker at the Engineers' Club recently, on the subject of "The Success of Municipal Ownership."

George L. Myers, assistant to the president of the Pacific Power & Light Company, Portland, and president of the Northwest Electric Light and Power Association, has just returned from New York where he attended a meeting of the executive committee of the National Electric Light Association.

Will J. French, former chairman of the Industrial Accident Commission of the State of California, and for thirteen years a member of that body, has resigned to become an executive officer of the California Society for the Blind.

Carl A. Becraft, for the past three years superintendent of the Hardin Electric Light & Power Company, Hardin, Mont., has resigned to become superintendent of utilities at Miles City, Mont. In his new work Mr. Becraft will have charge of the electric, water and heating plants.

A. W. Leonard, president of the Puget Sound Power & Light Company, Seattle, Wash., has been elected president of the Tacoma Railway & Power Company, Tacoma, Wash., and of the Northwest Traction Company. The former company operates the street railway system in Tacoma and the latter operates the interurban line between Mount Vernon, Wash., and Bellingham.

R. S. Beers, engineer of the railway equipment engineering department of the General Electric Company, Schenectady, is making a tour of the Pacific Coast offices of the company. Mr. Beers spent some time in San Francisco late in March and will visit all of the Western offices before returning to his headquarters.

John F. Greenawalt, publicity manager of the Mountain States Telephone & Telegraph Company, Denver, Colo., has just been elected secretary of the Colorado Public Service Association. Mr. Greenawalt was born in Cass County, Mich., where he later taught school for eight years. In 1898 he became owner and editor of the Florence, Colo., Tribune, and after six years of active newspaper work joined the staff of the Colorado Telephone Company. In 1911 he was appointed advertising manager of the Mountain States Telephone & Telegraph Company, which had

JOHN F. GREENAWALT

succeeded the Colorado Telephone Company. He was later made general publicity manager of the company which was by that time operating in Montana, Wyoming, Colorado, New Mexico, western Texas, Arizona, Utah and Idaho. Mr. Greenawalt is a member of the Rocky Mountain Committee on Public Utility Information; of the National Electric Light Association, and of various other civic and commercial organizations, including active membership in practically all of the electrical and utility associations of Denver.

Harry Noack, vice-president of the Pacific States Electric Company, San Francisco, recently completed a tour of inspection of the Pacific Northwest. Mr. Noack visited his company's offices in Portland, Ore., Spokane and Seattle, Wash.

Yasuke Anzo, electrical engineer, and **Masagoro Akazawa,** chief mechanical engineer, of the Tokyo Electric Light Company, Tokyo, Japan, are visiting the United States in the interests of the rebuilding of the properties destroyed by the recent earthquake in their country. They have spent some time in San Francisco, Calif., and will visit the major developments in California before going East to visit various manufacturers and power developments. Before returning to Japan they will also inspect electrical properties in England, Europe, India and other countries.

Robert Brewster, of the Radio Corporation of America, San Francisco, Calif., spoke before the Oakland Electric Club at the regular weekly luncheon on March 17. Mr. Brewster gave an interesting exposition of the latest developments in radio practice and demonstrated a new type super-heterodyne set.

Theodore Dwight has become associated with the firm of Murray & Flood, engineers, New York City.

C. Louis Collins, of Salt Lake City, Utah, has been appointed field secretary of the Rocky Mountain Electrical Cooperative League. Mr. Collins has had extensive experience along business lines, and has a wide acquaintance among the interests represented by the league. For eleven years, with the exception of one year in military service, he was associated with the Strevell-Paterson Hardware Company, of Salt Lake City, in office and accounting work. During the past five years he has held the position of office manager

C. LOUIS COLLINS

of the Motor Mercantile Company of Salt Lake City. One of Mr. Collins' first activities in his plan of promoting the welfare of the electrical fraternity in this section will be the establishing of an accounting method, based on standard and practical principles, to be adopted by the contractor-dealers. The standard accounting system of the Association of Electragists will undoubtedly be the one to be adopted. Mr. Collins will be in full charge of league affairs under the direction of the board of trustees.

Paul E. White, for some time illumination salesman for the San Francisco district of the Pacific Gas and Electric Company, has been appointed sales engineer in charge of domestic applications, succeeding Oliver E. Sholders, resigned.

John V. Strange, assistant general manager of the Pacific Power & Light Company, Portland, Ore., has just returned from New York where he conferred with executives of the Electric Bond & Share Company, parent organization of the utility with which he is connected.

Ben Ritter and **W. E. McCourt** topped the list of employees of the Public Service Company of Colorado in Denver in amount of new business developed during December, 1923, in the special and floor representatives group. The figures were recently announced by the new business department of the Doherty utilities. **M. G. Wrigley,** of the western division of the company at Boulder, was high man in the territorial representatives group.

Allan Bole, president of the National Pole Company, Escanaba, Mich., is in San Francisco on business for his company. Mr. Bole will visit other Pacific Coast cities before returning home.

F. C. Hitchcock, of Hitchcock & Tinkler, engineers, was a recent visitor to San Francisco, Calif., en route to New York City. Mr. Hitchcock is in charge of the construction of the Moffat tunnel through the Continental Divide.

Frederick D. Pratt, formerly president of the Tacoma Railway & Power Company, Tacoma, Wash., and of the Northwest Traction Company, Bellingham, has been succeeded by A. W. Leonard. Mr. Pratt will remain as chairman of the board of directors.

L. B. Gawan, lighting salesman of the Utah Power & Light Company, and prominently identified with the work of the Lighting Service Bureau of Salt Lake City, has been appointed a member of the Lighting Bureau of the Northwest Electric Light & Power Association.

K. E. Van Kuran, Los Angeles district manager of the Westinghouse Electric & Manufacturing Company, has gone to St. Louis, Mo., where he is attending a conference of district managers of the company. He will be away for about three weeks.

C. H. Forsgard, district superintendent of the western division of the Public Service Company of Colorado with headquarters at Boulder, Colo., has been transferred to Durham, N. C., as general manager of the Durham Public Service Company, a Doherty subsidiary. Before his departure for the south early in March, a dinner in his honor was held in Boulder at which representatives from all the Doherty properties in the mountain region were present.

Mrs. Alma E. Hunt, formerly home economist with the Southern Colorado Power Company, made her debut as a special demonstrator for the Edison Electric Appliance Company with the Public Service Company of Colorado in Denver early in March.

H. D. Randall, manager of the Rocky Mountain district of the General Electric Company with headquarters in Denver, Colo., was a visitor in Salt Lake City, Utah, last month. He attended the annual stockholders' meeting of the Capital Electric Company in that city.

Walter Cary, vice-president of the Westinghouse Electric & Manufacturing Company, of East Pittsburgh, Pa., and vice-president and general manager of the Westinghouse Lamp Company, through years of activity in the field of electrical illumination is known to electrical men in all sections of the country. He was born in Milwaukee, Wis., April 26, 1871; was educated at the Milwaukee High School and at Harvard University, from which he was graduated with the degree of A.B. in the class of 1893. Soon after graduation he associated himself with the Gibbs Electric Company of Milwaukee, with which he served as secretary from 1894

WALTER CARY

to 1898. This introduced him to the electrical industry, which he found congenial, and he fitted himself for further progress in it by intensive study of both its technical and administrative principles. Early in 1899, with some other Milwaukeans, he organized the Milwaukee Electric Company for the manufacture of dynamos and motors, becoming its vice-president on organization and its president in 1902. He remained with it as president until 1904, when he was called into service with the Westinghouse Lamp Company, of which he soon became vice-president and general manager. Under his active management this company has attained a high place in the incandescent lighting field. He was made vice-president of the Westinghouse Electric & Manufacturing Company on June 20, 1917, while continuing to hold his position with the lamp company. Mr. Cary has been especially active in the affairs of the Electrical Manufacturers' Club, having served as its secretary for five years, as vice-president for one year, and as president for one year. He is a member of the American Institute of Electrical Engineers and also of the University, Union and Harvard Clubs of New York City.

E. C. Macy, chief engineer for Stone & Webster, Boston, Mass., has recently returned from Japan where he was sent following the earthquake. Mr. Macy states that his company will build a hydroelectric plant costing approximately $10,000,000 to furnish electricity to the city of Tokyo and the surrounding district.

John Hood, who has recently represented the General Electric Company in Honolulu, has been appointed manager of the Oakland, Calif., works of that company.

Trade Outlook

San Francisco

Trade conditions, in general, are good. Although buying is still moderate, it has been stimulated by the rains that fell during the last week in March. Retail sales are reported normal for this period.

Shipping has increased in volume, resulting in less idleness along the waterfront than is usually existent at this season of the year. In other lines there is no marked degree of unemployment, skilled labor apparently being kept busy at good wages.

Demand for steel products is good, and the output is close to the record set last spring. Deliveries on electrical equipment are fairly good, although slow on some lines.

Money is free, with interest rates low, particularly on call money. Collections, which have been somewhat slow, are reported as showing improvement, and this of course tends to improve the credit situation.

Building continues at a brisk pace. Manufacturing companies are fairly active, the cracker and biscuit business particularly showing a steady growth. Milling companies are producing flour at a higher rate than last year.

Seattle

Passing the banner war boom year of 1920 by a good margin, and beating the 1923 record by more than 15 per cent, Seattle's bank clearings in February reached the total of $159,662,545, representing an increase of $28,000,000 over February of last year. Bankers state the showing made by these figures indicates the constantly growing tide of retail business, industrial progress, commerce and building activities.

The week just past has been the most active in residence construction for many months past, and indicates that spring house-building has begun in earnest.

Volume of sales of electrical merchandise is reported satisfactory by Seattle jobbers and dealers. Movement of household appliances and house-wiring devices is said to be particularly active, while the better class of fixtures is increasingly in demand. Prices, on the whole, show no important changes. Stocks are now in good condition, and shipments from eastern factories are coming through on schedule. The sales of electric heating devices, both large and small, have shown a satisfactory growth through the winter months, and interest in this form of heating is becoming widespread.

Los Angeles

Construction activity in Los Angeles is continuing unabated, as is evidenced by the building permits for the first fifteen days in March when 2,893 permits were issued with a valuation of $8,521,870. This represents a slight gain in the number of permits issued over the corresponding period of last year, but a slump in the valuation as no large permits were taken out. Bank clearings for the same period totaled $334,545,742.28, which represents an increase of 16 per cent over the corresponding period of last year, when they amounted to $287,103,634.57.

General business conditions are somewhat improved over the same period last month. However, there has been a slowing up in real estate transactions, which has affected both the wholesale and retail electrical business. The sale of electrical apparatus, while good, has not kept pace with the volume recorded prior to the first of the year, while other retail business has also slowed up to a slight extent.

The money market is somewhat firm and loans are tightening up. Collections are reported to be a little slow.

Recent rains have been beneficial, and farmers, orchardists and stock men are feeling more hopeful about the future. In consequence, business has been stimulated, and a general increase in sales volume is expected.

Salt Lake City

Plans are now under way for a record-breaking celebration in connection with the opening of the new steel plant near Provo, Utah. It is expected that this will be a state-wide event. Business interests throughout the entire Intermountain section feel that the starting of this new industry will mark a new era in the industrial activity of this region, and a great amount of interest is being taken in its development. The plant is expected to begin operations early in May.

Recent storms have given much encouragement to the farmers and stock raisers in this section, as it was feared for a time that there would be a lack of water during the coming season. This apprehension seems now, however, to be dispelled, and the agricultural districts are expected to enjoy a prosperous year.

Mining operations continue unabated, and there seems to be no reason to expect any material curtailment.

The Rocky Mountain Electrical Cooperative League has secured the services of a new field secretary, and is planning considerable activity in developing the field for all branches of the electrical industry.

Building operations continue to increase as the spring season approaches.

Business in general is becoming more satisfactory, and the outlook is exceedingly favorable.

Portland

Heavy production of lumber throughout January and February and light buying since the middle of the former month, coupled with good shipping conditions, have reduced the unfilled orders to such an extent that prices are weakening. During the last few weeks there has been some curtailment of production due to the slower demand from distant markets. Some of the mills have laid off one shift; others are working part time. There is an effort being made to maintain the organizations and avert wage reductions, in the hope that in a few weeks the lumber market condition will again warrant normal production.

Residence construction continues to be the outstanding feature in building activity. Real estate agents report easy sales of lots and houses. The city's population is growing rapidly.

Intercoastal shipping is in excellent condition in the Northwest. This business has had a steady growth and now forms a considerable part of Portland's commercial activities.

Spokane

Conditions in the lumber industry in northeastern Washington and northern Idaho are very good indeed. In Spokane the woodworking plants are running at good output.

Analysis of the real estate situation indicates that there are not many vacant houses available and that prices for small modern homes have stiffened appreciably since last year.

One of the large match block plants is about to make an addition that will give a total capacity of 800 carloads per year when completed. The Great Northern Railway has announced plans for construction of a new roundhouse costing about $150,000 with a capacity of 72 locomotives.

Mining conditions are exceptionally good, due to good prices for lead and zinc. The latest reports indicate a revival of activity in the Slocan district of British Columbia, where operations are to be conducted on a large scale, a program which involves the reopening of a number of old properties.

In a twelve days' campaign devoted to one make of washing machines, The Washington Water Power Company sold 78 machines, in three different models: 32 per cent were of the most expensive type, 54 per cent were of medium price, while only 14 per cent were of the cheapest type.

Denver

A fortnight of bad weather, with a good deal of snow, has held up building operations and outdoor improvements. It has had a marked effect on labor conditions, and retail business has not picked up in the manner expected early in March when a marked increase from the after-holiday dullness was noted. The moisture is, however, of untold benefit to the agricultural regions.

Stock raisers are optimistic over the outlook of the present season, especially sheep men, who view the wool situation as distinctly favorable.

Industrial improvements of major character continue to be announced, and a number of central stations are contemplating even greater programs than were indulged in last year. This is especially noticeable in the southern part of Colorado and in the Arkansas valley region.

In retail electrical trade, kitchen lighting campaigns, radio, and washing machines provide the principal activity. There is hardly a section of this region where a campaign is not being waged on one or more of these lines. Commercial lighting business is picking up, especially in display window equipment.

Jobbers report a steady volume with close competitive quotations, full stocks, and a tightening credit that promises improved conditions among the wholesalers.